

**Clinical trial results:****Phase III, Randomized, Double-Blind, Double-Dummy, Placebo-Controlled, Multicenter Study to Evaluate the Efficacy (Induction of Remission) and Safety of Etrolizumab Compared With Adalimumab and Placebo in Patients With Moderate to Severe Ulcerative Colitis who are Naive to TNF Inhibitors****Summary**

|                          |                |
|--------------------------|----------------|
| EudraCT number           | 2013-004279-11 |
| Trial protocol           | EE BG SK FR    |
| Global end of trial date | 19 March 2020  |

**Results information**

|                                |                  |
|--------------------------------|------------------|
| Result version number          | v2 (current)     |
| This version publication date  | 25 April 2021    |
| First version publication date | 14 February 2021 |
| Version creation reason        |                  |

**Trial information****Trial identification**

|                       |         |
|-----------------------|---------|
| Sponsor protocol code | GA28948 |
|-----------------------|---------|

**Additional study identifiers**

|                                    |             |
|------------------------------------|-------------|
| ISRCTN number                      | -           |
| ClinicalTrials.gov id (NCT number) | NCT02163759 |
| WHO universal trial number (UTN)   | -           |

Notes:

**Sponsors**

|                              |  |
|------------------------------|--|
| Sponsor organisation name    | F. Hoffmann-La Roche, Ltd.   |
| Sponsor organisation address | Grenzacherstrasse 124, Basel, Switzerland, CH-4070   |
| Public contact               | F. Hoffmann-La Roche, Ltd., F. Hoffmann-La Roche, Ltd., 41 616878333, global.trial_information@roche.com |
| Scientific contact           | F. Hoffmann-La Roche, Ltd., F. Hoffmann-La Roche, Ltd., 41 616878333, global.trial_information@roche.com |

Notes:

**Paediatric regulatory details**

|  |    |
|--|----|
| Is trial part of an agreed paediatric investigation plan (PIP)       | No |
| Does article 45 of REGULATION (EC) No 1901/2006 apply to this trial? | No |
| Does article 46 of REGULATION (EC) No 1901/2006 apply to this trial? | No |

Notes:

## Results analysis stage

|  |                  |
|--|------------------|
| Analysis stage                                       | Final            |
| Date of interim/final analysis                       | 19 March 2020    |
| Is this the analysis of the primary completion data? | Yes              |
| Primary completion date                              | 19 February 2020 |
| Global end of trial reached?                         | Yes              |
| Global end of trial date                             | 19 March 2020    |
| Was the trial ended prematurely?                     | No               |

Notes:

## General information about the trial

Main objective of the trial:

-To evaluate the efficacy of etrolizumab (105 mg SC every 4 weeks [Q4W]) compared with placebo for the induction of remission in TNF-naive patients with ulcerative colitis as determined by the Mayo Clinic Score at Week 10

Protection of trial subjects:

This study was conducted in full conformance with the ICH E6 guideline for Good Clinical Practice and the principles of the Declaration of Helsinki or the laws and regulations of the country in which the research is conducted, whichever afforded the greater protection to the individual. All subjects signed an informed consent form before participating in the study.

Background therapy:

During the induction phase (Day 1 to Week 10), continuation of stable baseline doses of the following non-investigational medicinal products were permitted: oral 5-aminosalicylic acid (5-ASA); azathioprine; 6-mercaptopurine; methotrexate; corticosteroids up to 30 milligrams per day (mg/day) of prednisone (or equivalent); and budesonide up to 9 mg/day. From Week 10 to Week 14, subjects who achieved clinical remission at Week 10 were to continue immunosuppressants (AZA, 6-MP, MTX) at a stable dose unless dose reduction or discontinuation was required due to immunosuppressant-related toxicity. For subjects who stayed in the study, corticosteroids were to be tapered starting from Week 10 in those who achieved clinical remission. Throughout the study, probiotics and oral 5-ASA may have been continued at a stable dose. Occasional use of NSAIDs and acetaminophen (e.g., for headache, arthritis, myalgias, menstrual cramps) and aspirin up to 325 mg daily were permitted throughout the study. Antidiarrheals (e.g., loperamide, diphenoxylate with atropine) for control of chronic diarrhea were permitted throughout the study.

Evidence for comparator: -

|   |                  |
|---|------------------|
| Actual start date of recruitment                          | 04 November 2014 |
| Long term follow-up planned                               | No               |
| Independent data monitoring committee (IDMC) involvement? | Yes              |

Notes:

## Population of trial subjects

### Subjects enrolled per country

|                                      |                        |
|--------------------------------------|------------------------|
| Country: Number of subjects enrolled | Argentina: 1           |
| Country: Number of subjects enrolled | Australia: 15          |
| Country: Number of subjects enrolled | Bulgaria: 5            |
| Country: Number of subjects enrolled | Brazil: 36             |
| Country: Number of subjects enrolled | Estonia: 15            |
| Country: Number of subjects enrolled | France: 3              |
| Country: Number of subjects enrolled | Hong Kong: 1           |
| Country: Number of subjects enrolled | Mexico: 4              |
| Country: Number of subjects enrolled | Poland: 79             |
| Country: Number of subjects enrolled | Russian Federation: 57 |

|                                      |                   |
|--------------------------------------|-------------------|
| Country: Number of subjects enrolled | Serbia: 33        |
| Country: Number of subjects enrolled | Slovakia: 29      |
| Country: Number of subjects enrolled | Ukraine: 68       |
| Country: Number of subjects enrolled | United States: 12 |
| Worldwide total number of subjects   | 358               |
| EEA total number of subjects         | 131               |

Notes:

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### **Subjects enrolled per age group**

|   |     |
|---|-----|
| In utero                                  | 0   |
| Preterm newborn - gestational age < 37 wk | 0   |
| Newborns (0-27 days)                      | 0   |
| Infants and toddlers (28 days-23 months)  | 0   |
| Children (2-11 years)                     | 0   |
| Adolescents (12-17 years)                 | 0   |
| Adults (18-64 years)                      | 337 |
| From 65 to 84 years                       | 21  |
| 85 years and over                         | 0   |

## Subject disposition

### Recruitment

Recruitment details: -

### Pre-assignment

Screening details:

Subjects on concomitant background therapy were allowed to continue receiving stable baseline doses of the following non-investigational medicinal products during the study: oral 5-ASA; azathioprine; 6-mercaptopurine; methotrexate; corticosteroids up to 30 mg/day of prednisone (or equivalent); and/or budesonide up to 9 mg/day.

### Period 1

|                              |                                |
|------------------------------|--------------------------------|
| Period 1 title               | Overall Study (overall period) |
| Is this the baseline period? | Yes                            |
| Allocation method            | Randomised - controlled        |
| Blinding used                | Double blind                   |
| Roles blinded                | Subject, Investigator          |

### Arms

|                              |         |
|------------------------------|---------|
| Are arms mutually exclusive? | Yes     |
| <b>Arm title</b>             | Placebo |

Arm description:

The double-blinded treatment period consisted of a 10-week induction period and an additional 4-week treatment period for participants who met the definition of clinical remission at Week 10. Participants with moderate-to-severe ulcerative colitis who were naive to TNF inhibitors were randomized to this arm to receive placebo matching to etrolizumab subcutaneously (SC) once every 4 weeks (Q4W) up to Week 12 (at Weeks 0 [Day 1], 4, 8, and 12 [clinical remitters only]) and placebo matching to adalimumab SC once every 2 weeks (Q2W) up to Week 8 (at Weeks 0 [Day 1], 2, 4, 6, and 8).

|  |  |
|--|--|
| Arm type                               | Placebo                                      |
| Investigational medicinal product name | Etrolizumab Placebo                          |
| Investigational medicinal product code |  |
| Other name                             |  |
| Pharmaceutical forms                   | Solution for injection in pre-filled syringe |
| Routes of administration               | Subcutaneous use                             |

Dosage and administration details:

The placebo matching to etrolizumab was supplied in a pre-filled syringe and was administered as an SC injection once every 4 weeks up to Week 12 (at Weeks 0 [Day 1], 4, 8, and 12 [clinical remitters only]).

|  |  |
|--|--|
| Investigational medicinal product name | Adalimumab Placebo                           |
| Investigational medicinal product code |  |
| Other name                             |  |
| Pharmaceutical forms                   | Solution for injection in pre-filled syringe |
| Routes of administration               | Subcutaneous use                             |

Dosage and administration details:

The placebo matching to adalimumab was supplied in a pre-filled syringe and was administered as an SC injection once every 2 weeks (Q2W) up to Week 8 (at Weeks 0 [Day 1], 2, 4, 6, and 8).

|                  |            |
|------------------|------------|
| <b>Arm title</b> | Adalimumab |
|------------------|------------|

Arm description:

The double-blinded treatment period consisted of a 10-week induction period and an additional 4-week treatment period for participants who met the definition of clinical remission at Week 10. Participants with moderate-to-severe ulcerative colitis who were naive to TNF inhibitors were randomized to this arm to receive adalimumab subcutaneously (SC) Q2W up to Week 8 (160 mg at Week 0 [Day 1], 80 mg at Week 2, 40 mg at Weeks 4, 6, and 8) and placebo matching to etrolizumab SC Q4W up to Week 12 (at Weeks 0 [Day 1], 4, 8, and 12 [clinical remitters only]).

|          |                   |
|----------|-------------------|
| Arm type | Active comparator |
|----------|-------------------|

|  |  |
|--|--|
| Investigational medicinal product name | Adalimumab                                   |
| Investigational medicinal product code |  |
| Other name                             | Humira                                       |
| Pharmaceutical forms                   | Solution for injection in pre-filled syringe |
| Routes of administration               | Subcutaneous use                             |

Dosage and administration details:

Adalimumab was supplied in a pre-filled syringe and was administered as an SC injection once every 2 weeks (Q2W) up to Week 8 (at Weeks 0 [Day 1], 2, 4, 6, and 8). Adalimumab was to be administered at a dose of 160 milligrams (mg) at Week 0 (Day 1; 4 injections), 80 mg at Week 2 (2 injections), and 40 mg (1 injection) at Weeks 4, 6, and 8.

|  |  |
|--|--|
| Investigational medicinal product name | Etrolizumab Placebo                          |
| Investigational medicinal product code |  |
| Other name                             |  |
| Pharmaceutical forms                   | Solution for injection in pre-filled syringe |
| Routes of administration               | Subcutaneous use                             |

Dosage and administration details:

The placebo matching to etrolizumab was supplied in a pre-filled syringe and was administered as an SC injection once every 4 weeks up to Week 12 (at Weeks 0 [Day 1], 4, 8, and 12 [clinical remitters only]).

|                  |             |
|------------------|-------------|
| <b>Arm title</b> | Etrolizumab |
|------------------|-------------|

Arm description:

The double-blinded treatment period consisted of a 10-week induction period and an additional 4-week treatment period for participants who met the definition of clinical remission at Week 10. Participants with moderate-to-severe ulcerative colitis who were naive to TNF inhibitors were randomized to this arm to receive etrolizumab 105 mg subcutaneously (SC) Q4W up to Week 12 (at Weeks 0 [Day 1], 4, 8, and 12 [clinical remitters only]) and placebo matching to adalimumab SC Q2W up to Week 8 (at Weeks 0 [Day 1], 2, 4, 6, and 8).

|  |  |
|--|--|
| Arm type                               | Experimental                                 |
| Investigational medicinal product name | Adalimumab Placebo                           |
| Investigational medicinal product code |  |
| Other name                             |  |
| Pharmaceutical forms                   | Solution for injection in pre-filled syringe |
| Routes of administration               | Subcutaneous use                             |

Dosage and administration details:

The placebo matching to adalimumab was supplied in a pre-filled syringe and was administered as an SC injection once every 2 weeks (Q2W) up to Week 8 (at Weeks 0 [Day 1], 2, 4, 6, and 8).

|  |  |
|--|--|
| Investigational medicinal product name | Etrolizumab                                  |
| Investigational medicinal product code | RO5490261                                    |
| Other name                             | PRO145223                                    |
| Pharmaceutical forms                   | Solution for injection in pre-filled syringe |
| Routes of administration               | Subcutaneous use                             |

Dosage and administration details:

Etrolizumab was supplied in a pre-filled syringe and was administered as an SC injection at a dose of 105 mg once every 4 weeks up to Week 12 (at Weeks 0 [Day 1], 4, 8, and 12 [clinical remitters only]).

| <b>Number of subjects in period 1</b> | Placebo | Adalimumab | Etrolizumab |
|---------------------------------------|---------|------------|-------------|
| Started                               | 72      | 142        | 144         |
| Completed Week 10                     | 71      | 141        | 143         |
| Completed                             | 71      | 137        | 141         |
| Not completed                         | 1       | 5          | 3           |
| Adverse event, serious fatal          | -       | -          | 1           |

|                              |   |   |   |
|------------------------------|---|---|---|
| Consent withdrawn by subject | 1 | 5 | 1 |
| Adverse event, non-fatal     | - | - | 1 |

## Baseline characteristics

### Reporting groups

|                       |         |
|-----------------------|---------|
| Reporting group title | Placebo |
|-----------------------|---------|

Reporting group description:

The double-blinded treatment period consisted of a 10-week induction period and an additional 4-week treatment period for participants who met the definition of clinical remission at Week 10. Participants with moderate-to-severe ulcerative colitis who were naive to TNF inhibitors were randomized to this arm to receive placebo matching to etrolizumab subcutaneously (SC) once every 4 weeks (Q4W) up to Week 12 (at Weeks 0 [Day 1], 4, 8, and 12 [clinical remitters only]) and placebo matching to adalimumab SC once every 2 weeks (Q2W) up to Week 8 (at Weeks 0 [Day 1], 2, 4, 6, and 8).

|                       |            |
|-----------------------|------------|
| Reporting group title | Adalimumab |
|-----------------------|------------|

Reporting group description:

The double-blinded treatment period consisted of a 10-week induction period and an additional 4-week treatment period for participants who met the definition of clinical remission at Week 10. Participants with moderate-to-severe ulcerative colitis who were naive to TNF inhibitors were randomized to this arm to receive adalimumab subcutaneously (SC) Q2W up to Week 8 (160 mg at Week 0 [Day 1], 80 mg at Week 2, 40 mg at Weeks 4, 6, and 8) and placebo matching to etrolizumab SC Q4W up to Week 12 (at Weeks 0 [Day 1], 4, 8, and 12 [clinical remitters only]).

|                       |             |
|-----------------------|-------------|
| Reporting group title | Etrolizumab |
|-----------------------|-------------|

Reporting group description:

The double-blinded treatment period consisted of a 10-week induction period and an additional 4-week treatment period for participants who met the definition of clinical remission at Week 10. Participants with moderate-to-severe ulcerative colitis who were naive to TNF inhibitors were randomized to this arm to receive etrolizumab 105 mg subcutaneously (SC) Q4W up to Week 12 (at Weeks 0 [Day 1], 4, 8, and 12 [clinical remitters only]) and placebo matching to adalimumab SC Q2W up to Week 8 (at Weeks 0 [Day 1], 2, 4, 6, and 8).

| Reporting group values                             | Placebo | Adalimumab | Etrolizumab |
|--|---------|------------|-------------|
| Number of subjects                                 | 72      | 142        | 144         |
| Age categorical                                    |         |            |             |
| Units: Subjects                                    |         |            |             |
| In utero   | 0       | 0          | 0           |
| Preterm newborn infants (gestational age < 37 wks) | 0       | 0          | 0           |
| Newborns (0-27 days)                               | 0       | 0          | 0           |
| Infants and toddlers (28 days-23 months)           | 0       | 0          | 0           |
| Children (2-11 years)                              | 0       | 0          | 0           |
| Adolescents (12-17 years)                          | 0       | 0          | 0           |
| Adults (18-64 years)                               | 69      | 133        | 135         |
| From 65-84 years                                   | 3       | 9          | 9           |
| 85 years and over                                  | 0       | 0          | 0           |
| Age Continuous                                     |         |            |             |
| Units: Years                                       |         |            |             |
| arithmetic mean                                    | 38.4    | 42.0       | 40.1        |
| standard deviation                                 | ± 13.3  | ± 13.8     | ± 13.4      |
| Sex: Female, Male                                  |         |            |             |
| Units: Participants                                |         |            |             |
| Female   | 33      | 60         | 70          |
| Male   | 39      | 82         | 74          |

|   |       |     |     |
|---|-------|-----|-----|
| Race/Ethnicity, Customized  |       |     |     |
| Units: Subjects   |       |     |     |
| Asian   | 0     | 2   | 0   |
| Black or African American   | 2     | 0   | 1   |
| White   | 68    | 130 | 138 |
| Other   | 2     | 10  | 5   |
| Ethnicity (NIH/OMB)   |       |     |     |
| Units: Subjects   |       |     |     |
| Hispanic or Latino  | 8     | 16  | 14  |
| Not Hispanic or Latino  | 63    | 123 | 128 |
| Unknown or Not Reported   | 1     | 3   | 2   |
| Disease Location  |       |     |     |
| Units: Subjects   |       |     |     |
| Left-Sided Colitis  | 44    | 84  | 89  |
| Extensive Colitis   | 10    | 23  | 22  |
| Pancolitis  | 18    | 35  | 33  |
| Mayo Clinic Score (MCS) $\leq 9$ or $\geq 10$ at Baseline   |       |     |     |
| Participants were stratified by concomitant treatment with corticosteroids (yes/no) at randomization, concomitant treatment with immunosuppressants (yes/no) at randomization, and disease activity measured during screening (MCS $\leq 9$ /MCS $\geq 10$ ). The MCS ranges from 0 to 12 and is a composite of the four following assessments of disease activity: stool frequency subscore, rectal bleeding subscore, endoscopy subscore, and physician's global assessment (PGA) subscore. Each of the four assessments was rated with a score from 0 to 3, with higher scores indicating more severe disease. |       |     |     |
| Units: Subjects   |       |     |     |
| MCS $\leq 9$  | 47    | 96  | 100 |
| MCS $\geq 10$   | 25    | 46  | 44  |
| Baseline Treatment: None, Corticosteroids (CS) or Immunosuppressants (IS) Alone, or Both CS and IS  |       |     |     |
| Participants were stratified by concomitant treatment with corticosteroids (yes/no) at randomization, concomitant treatment with immunosuppressants (yes/no) at randomization, and disease activity measured during screening (MCS $\leq 9$ /MCS $\geq 10$ ).   |       |     |     |
| Units: Subjects   |       |     |     |
| None  | 24    | 51  | 45  |
| Corticosteroids (CS) Alone  | 25    | 46  | 50  |
| Immunosuppressants (IS) Alone   | 15    | 30  | 32  |
| Both CS and IS  | 8     | 15  | 17  |
| Nancy Histological Index (NHI) Score of $\leq 1$ or $> 1$ , or Missing, at Baseline   |       |     |     |
| Histologic disease activity was measured using the Nancy Histological Index (NHI) score, ranging from 0 to 4, with the following definitions for each grade: 0 is no histologically significant disease; 1 is chronic inflammatory infiltrate with no acute inflammatory infiltrate; and 2, 3, and 4 are mildly, moderately, and severely active disease, respectively.   |       |     |     |
| Units: Subjects   |       |     |     |
| NHI Score $\leq 1$  | 8     | 15  | 15  |
| NHI Score $> 1$   | 62    | 116 | 120 |
| Missing   | 2     | 11  | 9   |
| <b>Reporting group values</b>   | Total |     |     |
| Number of subjects  | 358   |     |     |
| Age categorical   |       |     |     |
| Units: Subjects   |       |     |     |
| In utero  | 0     |     |     |

|   |     |  |  |
|---|-----|--|--|
| Preterm newborn infants (gestational age < 37 wks)  | 0   |  |  |
| Newborns (0-27 days)  | 0   |  |  |
| Infants and toddlers (28 days-23 months)  | 0   |  |  |
| Children (2-11 years)   | 0   |  |  |
| Adolescents (12-17 years)   | 0   |  |  |
| Adults (18-64 years)  | 337 |  |  |
| From 65-84 years  | 21  |  |  |
| 85 years and over   | 0   |  |  |
| Age Continuous<br>Units: Years<br>arithmetic mean<br>standard deviation   | -   |  |  |
| Sex: Female, Male<br>Units: Participants  |     |  |  |
| Female  | 163 |  |  |
| Male  | 195 |  |  |
| Race/Ethnicity, Customized<br>Units: Subjects   |     |  |  |
| Asian   | 2   |  |  |
| Black or African American   | 3   |  |  |
| White   | 336 |  |  |
| Other   | 17  |  |  |
| Ethnicity (NIH/OMB)<br>Units: Subjects  |     |  |  |
| Hispanic or Latino  | 38  |  |  |
| Not Hispanic or Latino  | 314 |  |  |
| Unknown or Not Reported   | 6   |  |  |
| Disease Location<br>Units: Subjects   |     |  |  |
| Left-Sided Colitis  | 217 |  |  |
| Extensive Colitis   | 55  |  |  |
| Pancolitis  | 86  |  |  |
| Mayo Clinic Score (MCS) $\leq 9$ or $\geq 10$ at Baseline   |     |  |  |
| Participants were stratified by concomitant treatment with corticosteroids (yes/no) at randomization, concomitant treatment with immunosuppressants (yes/no) at randomization, and disease activity measured during screening (MCS $\leq 9$ /MCS $\geq 10$ ). The MCS ranges from 0 to 12 and is a composite of the four following assessments of disease activity: stool frequency subscore, rectal bleeding subscore, endoscopy subscore, and physician's global assessment (PGA) subscore. Each of the four assessments was rated with a score from 0 to 3, with higher scores indicating more severe disease. |     |  |  |
| Units: Subjects   |     |  |  |
| MCS $\leq 9$  | 243 |  |  |
| MCS $\geq 10$   | 115 |  |  |
| Baseline Treatment: None, Corticosteroids (CS) or Immunosuppressants (IS) Alone, or Both CS and IS  |     |  |  |
| Participants were stratified by concomitant treatment with corticosteroids (yes/no) at randomization, concomitant treatment with immunosuppressants (yes/no) at randomization, and disease activity measured during screening (MCS $\leq 9$ /MCS $\geq 10$ ).   |     |  |  |
| Units: Subjects   |     |  |  |
| None  | 120 |  |  |
| Corticosteroids (CS) Alone  | 121 |  |  |

|   |     |  |  |
|---|-----|--|--|
| Immunosuppressants (IS) Alone   | 77  |  |  |
| Both CS and IS  | 40  |  |  |
| Nancy Histological Index (NHI) Score of $\leq 1$ or $> 1$ , or Missing, at Baseline   |     |  |  |
| Histologic disease activity was measured using the Nancy Histological Index (NHI) score, ranging from 0 to 4, with the following definitions for each grade: 0 is no histologically significant disease; 1 is chronic inflammatory infiltrate with no acute inflammatory infiltrate; and 2, 3, and 4 are mildly, moderately, and severely active disease, respectively. |     |  |  |
| Units: Subjects   |     |  |  |
| NHI Score $\leq 1$  | 38  |  |  |
| NHI Score $> 1$   | 298 |  |  |
| Missing   | 22  |  |  |

## Subject analysis sets

|                            |   |
|----------------------------|---|
| Subject analysis set title | Placebo - GA28948 & GA28949 Pooled Population |
| Subject analysis set type  | Modified intention-to-treat                   |

### Subject analysis set description:

The overall number of participants (144) in this analysis set represents the total number enrolled (72) in the placebo arm of this study, GA28948 (2013-004279-11), plus the total number enrolled (72) in the placebo arm of a second study of identical design, GA28949 (2013-004277-27). The double-blinded treatment period consisted of a 10-week induction period and an additional 4-week treatment period for participants who met the definition of clinical remission at Week 10. Participants with moderate-to-severe ulcerative colitis who were naive to TNF inhibitors were randomized to this arm to receive placebo matching to etrolizumab subcutaneously (SC) once every 4 weeks (Q4W) up to Week 12 (at Weeks 0 [Day 1], 4, 8, and 12 [clinical remitters only]) and placebo matching to adalimumab SC once every 2 weeks (Q2W) up to Week 8 (at Weeks 0 [Day 1], 2, 4, 6, and 8).

|                            |  |
|----------------------------|--|
| Subject analysis set title | Adalimumab - GA28948 & GA28949 Pooled Population |
| Subject analysis set type  | Modified intention-to-treat                      |

### Subject analysis set description:

The overall number of participants (285) in this analysis set represents the total number enrolled (142) in the adalimumab arm of this study, GA28948 (2013-004279-11), plus the total number enrolled (143) in the adalimumab arm of a second study of identical design, GA28949 (2013-004277-27). The double-blinded treatment period consisted of a 10-week induction period and an additional 4-week treatment period for participants who met the definition of clinical remission at Week 10. Participants with moderate-to-severe ulcerative colitis who were naive to TNF inhibitors were randomized to this arm to receive adalimumab subcutaneously (SC) Q2W up to Week 8 (160 mg at Week 0 [Day 1], 80 mg at Week 2, 40 mg at Weeks 4, 6, and 8) and placebo matching to etrolizumab SC Q4W up to Week 12 (at Weeks 0 [Day 1], 4, 8, and 12 [clinical remitters only]).

|                            |   |
|----------------------------|---|
| Subject analysis set title | Etrolizumab - GA28948 & GA28949 Pooled Population |
| Subject analysis set type  | Modified intention-to-treat                       |

### Subject analysis set description:

The overall number of participants (287) in this analysis set represents the total number enrolled (144) in the etrolizumab arm of this study, GA28948 (2013-004279-11), plus the total number enrolled (143) in the etrolizumab arm of a second study of identical design, GA28949 (2013-004277-27). The double-blinded treatment period consisted of a 10-week induction period and an additional 4-week treatment period for participants who met the definition of clinical remission at Week 10. Participants with moderate-to-severe ulcerative colitis who were naive to TNF inhibitors were randomized to this arm to receive etrolizumab 105 mg subcutaneously (SC) Q4W up to Week 12 (at Weeks 0 [Day 1], 4, 8, and 12 [clinical remitters only]) and placebo matching to adalimumab SC Q2W up to Week 8 (at Weeks 0 [Day 1], 2, 4, 6, and 8).

| Reporting group values | Placebo - GA28948 & GA28949 Pooled Population | Adalimumab - GA28948 & GA28949 Pooled Population | Etrolizumab - GA28948 & GA28949 Pooled Population |
|------------------------|---|--|---|
| Number of subjects     | 144   | 285  | 287   |
| Age categorical        |   |  |   |
| Units: Subjects        |   |  |   |
| In utero               | 0   | 0  | 0   |

|   |        |        |        |
|---|--------|--------|--------|
| Preterm newborn infants (gestational age < 37 wks)  | 0      | 0      | 0      |
| Newborns (0-27 days)  | 0      | 0      | 0      |
| Infants and toddlers (28 days-23 months)  | 0      | 0      | 0      |
| Children (2-11 years)   | 0      | 0      | 0      |
| Adolescents (12-17 years)   | 0      | 0      | 0      |
| Adults (18-64 years)  | 139    | 272    | 270    |
| From 65-84 years  | 5      | 13     | 17     |
| 85 years and over   | 0      | 0      | 0      |
| Age Continuous  |        |        |        |
| Units: Years  |        |        |        |
| arithmetic mean   | 39.4   | 40.8   | 40.6   |
| standard deviation  | ± 12.9 | ± 13.2 | ± 13.9 |
| Sex: Female, Male   |        |        |        |
| Units: Participants   |        |        |        |
| Female  | 67     | 122    | 129    |
| Male  | 77     | 163    | 158    |
| Race/Ethnicity, Customized  |        |        |        |
| Units: Subjects   |        |        |        |
| Asian   | 4      | 6      | 4      |
| Black or African American   | 3      | 4      | 2      |
| White   | 133    | 261    | 271    |
| Other   | 4      | 14     | 10     |
| Ethnicity (NIH/OMB)   |        |        |        |
| Units: Subjects   |        |        |        |
| Hispanic or Latino  | 13     | 27     | 26     |
| Not Hispanic or Latino  | 130    | 253    | 256    |
| Unknown or Not Reported   | 1      | 5      | 5      |
| Disease Location  |        |        |        |
| Units: Subjects   |        |        |        |
| Left-Sided Colitis  | 92     | 170    | 175    |
| Extensive Colitis   | 17     | 36     | 33     |
| Pancolitis  | 35     | 79     | 79     |
| Mayo Clinic Score (MCS) ≤9 or ≥10 at Baseline   |        |        |        |
| Participants were stratified by concomitant treatment with corticosteroids (yes/no) at randomization, concomitant treatment with immunosuppressants (yes/no) at randomization, and disease activity measured during screening (MCS ≤9/MCS ≥10). The MCS ranges from 0 to 12 and is a composite of the four following assessments of disease activity: stool frequency subscore, rectal bleeding subscore, endoscopy subscore, and physician's global assessment (PGA) subscore. Each of the four assessments was rated with a score from 0 to 3, with higher scores indicating more severe disease. |        |        |        |
| Units: Subjects   |        |        |        |
| MCS ≤9  | 93     | 192    | 196    |
| MCS ≥10   | 51     | 93     | 91     |
| Baseline Treatment: None, Corticosteroids (CS) or Immunosuppressants (IS) Alone, or Both CS and IS  |        |        |        |
| Participants were stratified by concomitant treatment with corticosteroids (yes/no) at randomization, concomitant treatment with immunosuppressants (yes/no) at randomization, and disease activity measured during screening (MCS ≤9/MCS ≥10).   |        |        |        |
| Units: Subjects   |        |        |        |
| None  | 51     | 104    | 100    |
| Corticosteroids (CS) Alone  | 48     | 88     | 90     |

|   |     |     |     |
|---|-----|-----|-----|
| Immunosuppressants (IS) Alone   | 29  | 58  | 60  |
| Both CS and IS  | 16  | 35  | 37  |
| Nancy Histological Index (NHI) Score of $\leq 1$ or $> 1$ , or Missing, at Baseline   |     |     |     |
| Histologic disease activity was measured using the Nancy Histological Index (NHI) score, ranging from 0 to 4, with the following definitions for each grade: 0 is no histologically significant disease; 1 is chronic inflammatory infiltrate with no acute inflammatory infiltrate; and 2, 3, and 4 are mildly, moderately, and severely active disease, respectively. |     |     |     |
| Units: Subjects   |     |     |     |
| NHI Score $\leq 1$  | 17  | 38  | 36  |
| NHI Score $> 1$   | 124 | 230 | 228 |
| Missing   | 3   | 17  | 23  |

## End points

### End points reporting groups

|                       |         |
|-----------------------|---------|
| Reporting group title | Placebo |
|-----------------------|---------|

Reporting group description:

The double-blinded treatment period consisted of a 10-week induction period and an additional 4-week treatment period for participants who met the definition of clinical remission at Week 10. Participants with moderate-to-severe ulcerative colitis who were naive to TNF inhibitors were randomized to this arm to receive placebo matching to etrolizumab subcutaneously (SC) once every 4 weeks (Q4W) up to Week 12 (at Weeks 0 [Day 1], 4, 8, and 12 [clinical remitters only]) and placebo matching to adalimumab SC once every 2 weeks (Q2W) up to Week 8 (at Weeks 0 [Day 1], 2, 4, 6, and 8).

|                       |            |
|-----------------------|------------|
| Reporting group title | Adalimumab |
|-----------------------|------------|

Reporting group description:

The double-blinded treatment period consisted of a 10-week induction period and an additional 4-week treatment period for participants who met the definition of clinical remission at Week 10. Participants with moderate-to-severe ulcerative colitis who were naive to TNF inhibitors were randomized to this arm to receive adalimumab subcutaneously (SC) Q2W up to Week 8 (160 mg at Week 0 [Day 1], 80 mg at Week 2, 40 mg at Weeks 4, 6, and 8) and placebo matching to etrolizumab SC Q4W up to Week 12 (at Weeks 0 [Day 1], 4, 8, and 12 [clinical remitters only]).

|                       |             |
|-----------------------|-------------|
| Reporting group title | Etrolizumab |
|-----------------------|-------------|

Reporting group description:

The double-blinded treatment period consisted of a 10-week induction period and an additional 4-week treatment period for participants who met the definition of clinical remission at Week 10. Participants with moderate-to-severe ulcerative colitis who were naive to TNF inhibitors were randomized to this arm to receive etrolizumab 105 mg subcutaneously (SC) Q4W up to Week 12 (at Weeks 0 [Day 1], 4, 8, and 12 [clinical remitters only]) and placebo matching to adalimumab SC Q2W up to Week 8 (at Weeks 0 [Day 1], 2, 4, 6, and 8).

|                            |   |
|----------------------------|---|
| Subject analysis set title | Placebo - GA28948 & GA28949 Pooled Population |
|----------------------------|---|

|                           |                             |
|---------------------------|-----------------------------|
| Subject analysis set type | Modified intention-to-treat |
|---------------------------|-----------------------------|

Subject analysis set description:

The overall number of participants (144) in this analysis set represents the total number enrolled (72) in the placebo arm of this study, GA28948 (2013-004279-11), plus the total number enrolled (72) in the placebo arm of a second study of identical design, GA28949 (2013-004277-27). The double-blinded treatment period consisted of a 10-week induction period and an additional 4-week treatment period for participants who met the definition of clinical remission at Week 10. Participants with moderate-to-severe ulcerative colitis who were naive to TNF inhibitors were randomized to this arm to receive placebo matching to etrolizumab subcutaneously (SC) once every 4 weeks (Q4W) up to Week 12 (at Weeks 0 [Day 1], 4, 8, and 12 [clinical remitters only]) and placebo matching to adalimumab SC once every 2 weeks (Q2W) up to Week 8 (at Weeks 0 [Day 1], 2, 4, 6, and 8).

|                            |  |
|----------------------------|--|
| Subject analysis set title | Adalimumab - GA28948 & GA28949 Pooled Population |
|----------------------------|--|

|                           |                             |
|---------------------------|-----------------------------|
| Subject analysis set type | Modified intention-to-treat |
|---------------------------|-----------------------------|

Subject analysis set description:

The overall number of participants (285) in this analysis set represents the total number enrolled (142) in the adalimumab arm of this study, GA28948 (2013-004279-11), plus the total number enrolled (143) in the adalimumab arm of a second study of identical design, GA28949 (2013-004277-27). The double-blinded treatment period consisted of a 10-week induction period and an additional 4-week treatment period for participants who met the definition of clinical remission at Week 10. Participants with moderate-to-severe ulcerative colitis who were naive to TNF inhibitors were randomized to this arm to receive adalimumab subcutaneously (SC) Q2W up to Week 8 (160 mg at Week 0 [Day 1], 80 mg at Week 2, 40 mg at Weeks 4, 6, and 8) and placebo matching to etrolizumab SC Q4W up to Week 12 (at Weeks 0 [Day 1], 4, 8, and 12 [clinical remitters only]).

|                            |   |
|----------------------------|---|
| Subject analysis set title | Etrolizumab - GA28948 & GA28949 Pooled Population |
|----------------------------|---|

|                           |                             |
|---------------------------|-----------------------------|
| Subject analysis set type | Modified intention-to-treat |
|---------------------------|-----------------------------|

Subject analysis set description:

The overall number of participants (287) in this analysis set represents the total number enrolled (144) in the etrolizumab arm of this study, GA28948 (2013-004279-11), plus the total number enrolled (143) in the etrolizumab arm of a second study of identical design, GA28949 (2013-004277-27). The double-blinded treatment period consisted of a 10-week induction period and an additional 4-week treatment period for participants who met the definition of clinical remission at Week 10. Participants with moderate-to-severe ulcerative colitis who were naive to TNF inhibitors were randomized to this arm to receive etrolizumab 105 mg subcutaneously (SC) Q4W up to Week 12 (at Weeks 0 [Day 1], 4, 8, and 12

**Primary: Percentage of Participants in Remission at Week 10 With Etrolizumab as Compared With Placebo, as Determined by the Mayo Clinic Score (MCS), GA28948 Population**

|                 |   |
|-----------------|---|
| End point title | Percentage of Participants in Remission at Week 10 With Etrolizumab as Compared With Placebo, as Determined by the Mayo Clinic Score (MCS), GA28948 Population <sup>[1]</sup> |
|-----------------|---|

End point description:

The Mayo Clinic Score (MCS) ranges from 0 to 12 and is a composite of the four following assessments of disease activity: stool frequency subscore, rectal bleeding subscore, endoscopy subscore, and physician's global assessment (PGA) subscore. Each of the four assessments was rated with a score from 0 to 3, with higher scores indicating more severe disease. Remission was defined as MCS less than or equal to ( $\leq$ ) 2 with individual subscores  $\leq$  1 and a rectal bleeding subscore of 0. Participants were also classified as non-remitters if Week 10 assessments were missing or if they had received permitted/prohibited rescue therapy prior to assessment. Participants were stratified by concomitant treatment with corticosteroids or immunosuppressants at randomization and disease activity measured during screening (MCS  $\leq$  9/MCS  $\geq$  10); the Cochran-Mantel-Haenszel test adjusted the difference in remission rates and associated 95% confidence interval for the stratification factors.

|                |         |
|----------------|---------|
| End point type | Primary |
|----------------|---------|

End point timeframe:

Week 10

Notes:

[1] - The end point is not reporting statistics for all the arms in the baseline period. It is expected all the baseline period arms will be reported on when providing values for an end point on the baseline period.

Justification: The primary outcome measure only compared remission rates between the etrolizumab and placebo arms.

| End point values                  | Placebo             | Etrolizumab           |  |  |
|-----------------------------------|---------------------|-----------------------|--|--|
| Subject group type                | Reporting group     | Reporting group       |  |  |
| Number of subjects analysed       | 72                  | 144                   |  |  |
| Units: Percentage of participants |                     |                       |  |  |
| number (confidence interval 95%)  | 6.9 (3.00 to 15.25) | 19.4 (13.81 to 26.67) |  |  |

**Statistical analyses**

|                                   |   |
|-----------------------------------|---|
| <b>Statistical analysis title</b> | Etrolizumab vs. Placebo: Remission at Week 10 |
|-----------------------------------|---|

Statistical analysis description:

The null hypothesis (H0): the percentage of participants achieving remission at Week 10 was the same in both the placebo and etrolizumab arms. The alternative hypothesis (H1): the percentage of participants achieving remission at Week 10 was not the same in the placebo and etrolizumab arms.

|   |                               |
|---|-------------------------------|
| Comparison groups                       | Placebo v Etrolizumab         |
| Number of subjects included in analysis | 216                           |
| Analysis specification                  | Pre-specified                 |
| Analysis type                           | superiority <sup>[2]</sup>    |
| P-value                                 | = 0.0173 <sup>[3]</sup>       |
| Method                                  | Cochran-Mantel-Haenszel       |
| Parameter estimate                      | Difference in Remission Rates |
| Point estimate                          | 12.3                          |

| Confidence interval |         |
|---------------------|---------|
| level               | 95 %    |
| sides               | 2-sided |
| lower limit         | 1.59    |
| upper limit         | 20.6    |

Notes:

[2] - Difference and 95% CI adjusted for concomitant treatment with corticosteroids or immunosuppressants at baseline (BL) and MCS ( $\leq 9$  or  $\geq 10$ ) at BL. Difference in remission rates was calculated as the etrolizumab arm minus the placebo arm.

[3] - The threshold for statistical significance was a p-value  $< 0.05$ .

### Secondary: Percentage of Participants in Remission at Week 10 With Etrolizumab as Compared With Adalimumab, as Determined by the MCS, GA28948 Population

|                 |  |
|-----------------|--|
| End point title | Percentage of Participants in Remission at Week 10 With Etrolizumab as Compared With Adalimumab, as Determined by the MCS, GA28948 Population <sup>[4]</sup> |
|-----------------|--|

End point description:

The Mayo Clinic Score (MCS) ranges from 0 to 12 and is a composite of the four following assessments of disease activity: stool frequency subscore, rectal bleeding subscore, endoscopy subscore, and physician's global assessment (PGA) subscore. Each of the four assessments was rated with a score from 0 to 3, with higher scores indicating more severe disease. Remission was defined as MCS less than or equal to ( $\leq$ ) 2 with individual subscores  $\leq 1$  and a rectal bleeding subscore of 0. Participants were also classified as non-remitters if Week 10 assessments were missing or if they had received permitted/prohibited rescue therapy prior to assessment. Participants were stratified by concomitant treatment with corticosteroids or immunosuppressants at randomization and disease activity measured during screening (MCS  $\leq 9$ /MCS  $\geq 10$ ). The Cochran-Mantel-Haenszel test adjusted the difference in remission rates and associated 95% confidence interval for the stratification factors.

|                |           |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

Week 10

Notes:

[4] - The end point is not reporting statistics for all the arms in the baseline period. It is expected all the baseline period arms will be reported on when providing values for an end point on the baseline period.

Justification: This secondary outcome measure of participants in remission only compared remission rates between the etrolizumab and adalimumab arms.

| End point values                  | Adalimumab            | Etrolizumab           |  |  |
|-----------------------------------|-----------------------|-----------------------|--|--|
| Subject group type                | Reporting group       | Reporting group       |  |  |
| Number of subjects analysed       | 142                   | 144                   |  |  |
| Units: Percentage of participants |                       |                       |  |  |
| number (confidence interval 95%)  | 22.5 (16.44 to 30.08) | 19.4 (13.81 to 26.67) |  |  |

### Statistical analyses

|                            |  |
|----------------------------|--|
| Statistical analysis title | Etrolizumab vs. Adalimumab: Remission at Week 10 |
|----------------------------|--|

Statistical analysis description:

Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. Please refer to the statistical analysis plan for details. This comparison was not considered a key secondary outcome measure and was not part of the multiple testing procedure for statistical significance.

|                   |                          |
|-------------------|--------------------------|
| Comparison groups | Adalimumab v Etrolizumab |
|-------------------|--------------------------|

|   |                               |
|---|-------------------------------|
| Number of subjects included in analysis | 286                           |
| Analysis specification                  | Pre-specified                 |
| Analysis type                           | superiority <sup>[5]</sup>    |
| P-value                                 | = 0.5055 <sup>[6]</sup>       |
| Method                                  | Cochran-Mantel-Haenszel       |
| Parameter estimate                      | Difference in Remission Rates |
| Point estimate                          | -3.1                          |
| Confidence interval                     |                               |
| level                                   | 95 %                          |
| sides                                   | 2-sided                       |
| lower limit                             | -12.61                        |
| upper limit                             | 6.37                          |

Notes:

[5] - Difference and 95% CI adjusted for concomitant treatment with corticosteroids or immunosuppressants at baseline (BL) and MCS ( $\leq 9$  or  $\geq 10$ ) at BL. Difference in remission rates was calculated as the etrolizumab arm minus the adalimumab arm.

[6] - Nominal p-value; it has not been adjusted for multiplicity.

### **Secondary: Percentage of Participants in Remission at Week 10 With Etrolizumab as Compared With Adalimumab, as Determined by the MCS, GA28948 & GA28949 Pooled Population**

|                 |  |
|-----------------|--|
| End point title | Percentage of Participants in Remission at Week 10 With Etrolizumab as Compared With Adalimumab, as Determined by the MCS, GA28948 & GA28949 Pooled Population |
|-----------------|--|

End point description:

The Mayo Clinic Score (MCS) ranges from 0 to 12 and is a composite of the four following assessments of disease activity: stool frequency subscore, rectal bleeding subscore, endoscopy subscore, and physician's global assessment (PGA) subscore. Each of the four assessments was rated with a score from 0 to 3, with higher scores indicating more severe disease. Remission was defined as MCS less than or equal to ( $\leq$ )2 with individual subscores  $\leq 1$  and a rectal bleeding subscore of 0. Participants were also classified as non-remitters if Week 10 assessments were missing or if they had received permitted/prohibited rescue therapy prior to assessment. Participants were stratified by concomitant treatment with corticosteroids or immunosuppressants at randomization and disease activity measured during screening (MCS  $\leq 9$ /MCS  $\geq 10$ ). The Cochran-Mantel-Haenszel test adjusted the difference in remission rates and associated 95% confidence interval for the stratification factors.

|                |           |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

Week 10

| <b>End point values</b>           | Adalimumab - GA28948 & GA28949 Pooled Population | Etrolizumab - GA28948 & GA28949 Pooled Population |  |  |
|-----------------------------------|--|---|--|--|
| Subject group type                | Subject analysis set                             | Subject analysis set                              |  |  |
| Number of subjects analysed       | 285  | 287   |  |  |
| Units: Percentage of participants |  |   |  |  |
| number (confidence interval 95%)  | 23.5 (18.96 to 28.76)                            | 18.8 (14.72 to 23.74)                             |  |  |

### **Statistical analyses**

|   |  |
|---|--|
| <b>Statistical analysis title</b>   | Etro. vs. Ada. (Pooled): Remission at Week 10  |
| Statistical analysis description:   |  |
| Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. This comparison was part of Family 3 of the testing procedure; please refer to the statistical analysis plan for details. |  |
| Comparison groups   | Adalimumab - GA28948 & GA28949 Pooled Population v Etrolizumab - GA28948 & GA28949 Pooled Population |
| Number of subjects included in analysis   | 572  |
| Analysis specification  | Pre-specified  |
| Analysis type   | superiority <sup>[7]</sup>   |
| P-value   | = 1 <sup>[8]</sup>   |
| Method  | Cochran-Mantel-Haenszel  |
| Parameter estimate  | Difference in Remission Rates  |
| Point estimate  | -5   |
| Confidence interval   |  |
| level   | 95 %   |
| sides   | 2-sided  |
| lower limit   | -11.66   |
| upper limit   | 1.75   |

Notes:

[7] - Difference and 95% CI adjusted for concomitant treatment with corticosteroids or immunosuppressants at baseline (BL) and MCS ( $\leq 9$  or  $\geq 10$ ) at BL. Difference in remission rates was calculated as the etrolizumab arm minus the adalimumab arm.

[8] - p-value has been adjusted for multiplicity.

### **Secondary: Percentage of Participants With Clinical Response at Week 10, as Determined by the MCS, GA28948 Population**

|                 |  |
|-----------------|--|
| End point title | Percentage of Participants With Clinical Response at Week 10, as Determined by the MCS, GA28948 Population |
|-----------------|--|

End point description:

The Mayo Clinic Score (MCS) ranges from 0 to 12 and is a composite of the four following assessments of disease activity: stool frequency subscore, rectal bleeding subscore, endoscopy subscore, and physician's global assessment subscore. Each of the four assessments was rated with a score from 0 to 3, with higher scores indicating more severe disease. Clinical Response was defined as: MCS  $\geq 3$ -point decrease and 30% reduction from baseline as well as  $\geq 1$ -point decrease in rectal bleeding subscore or an absolute rectal bleeding score of 0 or 1. Non-responders also included participants with missing Week 10 assessments or those who had received permitted/prohibited rescue therapy prior to assessment. Participants were stratified by concomitant treatment with corticosteroids or immunosuppressants at randomization and disease activity measured during screening (MCS  $\leq 9$  or  $\geq 10$ ); the CMH test adjusted the differences in response rates and associated 95% CIs for the stratification factors.

|                |           |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

Week 10

| <b>End point values</b>           | Placebo               | Adalimumab            | Etrolizumab           |  |
|-----------------------------------|-----------------------|-----------------------|-----------------------|--|
| Subject group type                | Reporting group       | Reporting group       | Reporting group       |  |
| Number of subjects analysed       | 72                    | 142                   | 144                   |  |
| Units: Percentage of participants |                       |                       |                       |  |
| number (confidence interval 95%)  | 50.0 (38.75 to 61.25) | 52.1 (43.95 to 60.16) | 56.9 (48.78 to 64.75) |  |

## Statistical analyses

|  |  |
|--|--|
| <b>Statistical analysis title</b>  | Etro vs. Placebo: Clinical Response at Week 10 |
| Statistical analysis description:<br>Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. This comparison was part of Family 1 of the testing procedure; please refer to the statistical analysis plan for details. |  |
| Comparison groups  | Placebo v Etrolizumab                          |
| Number of subjects included in analysis  | 216  |
| Analysis specification   | Pre-specified                                  |
| Analysis type  | superiority <sup>[9]</sup>                     |
| P-value  | = 0.4434 <sup>[10]</sup>                       |
| Method   | Cochran-Mantel-Haenszel                        |
| Parameter estimate   | Difference in Response Rates                   |
| Point estimate   | 6.9  |
| Confidence interval  |  |
| level  | 95 %   |
| sides  | 2-sided  |
| lower limit  | -7.03  |
| upper limit  | 20.62  |

### Notes:

[9] - Difference and 95% CI adjusted for concomitant treatment with corticosteroids or immunosuppressants at baseline (BL) and MCS ( $\leq 9$  or  $\geq 10$ ) at BL. Difference in response rates was calculated as the etrolizumab arm minus the placebo arm.

[10] - p-value has been adjusted for multiplicity.

|   |   |
|---|---|
| <b>Statistical analysis title</b>   | Etro vs. Adalimumab: Clinical Response at Week 10 |
| Statistical analysis description:<br>Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. Please refer to the statistical analysis plan for details. This comparison was not considered a key secondary outcome measure and was not part of the multiple testing procedure for statistical significance. |   |
| Comparison groups   | Adalimumab v Etrolizumab                          |
| Number of subjects included in analysis   | 286   |
| Analysis specification  | Pre-specified                                     |
| Analysis type   | superiority <sup>[11]</sup>                       |
| P-value   | = 0.4122 <sup>[12]</sup>                          |
| Method  | Cochran-Mantel-Haenszel                           |
| Parameter estimate  | Difference in Response Rates                      |
| Point estimate  | 4.8   |
| Confidence interval   |   |
| level   | 95 %  |
| sides   | 2-sided   |
| lower limit   | -6.72   |
| upper limit   | 16.07   |

### Notes:

[11] - Difference and 95% CI adjusted for concomitant treatment with corticosteroids or immunosuppressants at baseline (BL) and MCS ( $\leq 9$  or  $\geq 10$ ) at BL. Difference in response rates was calculated as the etrolizumab arm minus the adalimumab arm.

[12] - Nominal p-value; it has not been adjusted for multiplicity.

## **Secondary: Percentage of Participants With Clinical Response at Week 10 With Etrolizumab as Compared With Adalimumab, as Determined by the MCS, GA28948 & GA28949 Pooled Population**

|                 |   |
|-----------------|---|
| End point title | Percentage of Participants With Clinical Response at Week 10 With Etrolizumab as Compared With Adalimumab, as |
|-----------------|---|

## End point description:

The Mayo Clinic Score (MCS) ranges from 0 to 12 and is a composite of the four following assessments of disease activity: stool frequency subscore, rectal bleeding subscore, endoscopy subscore, and physician's global assessment subscore. Each of the four assessments was rated with a score from 0 to 3, with higher scores indicating more severe disease. Clinical Response was defined as: MCS  $\geq 3$ -point decrease and 30% reduction from baseline as well as  $\geq 1$ -point decrease in rectal bleeding subscore or an absolute rectal bleeding score of 0 or 1. Non-responders also included participants with missing Week 10 assessments or those who had received permitted/prohibited rescue therapy prior to assessment. Participants were stratified by concomitant treatment with corticosteroids or immunosuppressants at randomization and disease activity measured during screening (MCS  $\leq 9$  or  $\geq 10$ ); the CMH test adjusted the differences in response rates and associated 95% CIs for the stratification factors.

|                |           |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

Week 10

| End point values                  | Adalimumab - GA28948 & GA28949 Pooled Population | Etolizumab - GA28948 & GA28949 Pooled Population |  |  |
|-----------------------------------|--|--|--|--|
| Subject group type                | Subject analysis set                             | Subject analysis set                             |  |  |
| Number of subjects analysed       | 285  | 287  |  |  |
| Units: Percentage of participants |  |  |  |  |
| number (confidence interval 95%)  | 53.3 (47.54 to 59.04)                            | 54.7 (48.92 to 60.36)                            |  |  |

## Statistical analyses

|                            |  |
|----------------------------|--|
| Statistical analysis title | Etro vs. Ada (Pooled): Clinical Response |
|----------------------------|--|

## Statistical analysis description:

Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. This comparison was part of Family 3 of the testing procedure; please refer to the statistical analysis plan for details.

|   |  |
|---|--|
| Comparison groups                       | Adalimumab - GA28948 & GA28949 Pooled Population v Etrolizumab - GA28948 & GA28949 Pooled Population |
| Number of subjects included in analysis | 572  |
| Analysis specification                  | Pre-specified  |
| Analysis type                           | superiority <sup>[13]</sup>  |
| P-value                                 | = 1 <sup>[14]</sup>  |
| Method                                  | Cochran-Mantel-Haenszel  |
| Parameter estimate                      | Difference in Response Rates   |
| Point estimate                          | 1.2  |
| Confidence interval                     |  |
| level                                   | 95 %   |
| sides                                   | 2-sided  |
| lower limit                             | -6.98  |
| upper limit                             | 9.26   |

Notes:

[13] - Difference and 95% CI adjusted for concomitant treatment with corticosteroids or immunosuppressants at baseline (BL) and MCS ( $\leq 9$  or  $\geq 10$ ) at BL. Difference in response rates was calculated as the etrolizumab arm minus the adalimumab arm.

[14] - p-value has been adjusted for multiplicity.

## Secondary: Percentage of Participants With Improvement in Endoscopic Appearance of the Mucosa at Week 10, as Determined by the MCS Endoscopy Subscore, GA28948 Population

|                 |  |
|-----------------|--|
| End point title | Percentage of Participants With Improvement in Endoscopic Appearance of the Mucosa at Week 10, as Determined by the MCS Endoscopy Subscore, GA28948 Population |
|-----------------|--|

End point description:

Improvement in endoscopic appearance of the mucosa was defined as a Mayo Clinic Score (MCS) endoscopy subscore  $\leq 1$ . Blinded gastroenterologists experienced in inflammatory bowel disease performed central reading of endoscopies at an independent review facility. The rectum, sigmoid, and descending colon segments were assessed and each segment was assigned a score of 0 to 3, with higher scores indicating more severe disease. At baseline all segments were reviewed and the worst score from the three segments was recorded as the endoscopy subscore. Post-baseline the endoscopy score was the worst score of all segments that had been assessed at baseline, if the baseline endoscopy score had a sigmoid colon score  $\leq 1$ . If at baseline the sigmoid colon score was  $\geq 2$ , the post-baseline endoscopy score was the sigmoid colon score value. Non-responders also included participants with missing Week 10 assessments or those who had received permitted/prohibited rescue therapy prior to assessment.

|                |           |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

Week 10

| End point values                  | Placebo               | Adalimumab            | Etrolizumab           |  |
|-----------------------------------|-----------------------|-----------------------|-----------------------|--|
| Subject group type                | Reporting group       | Reporting group       | Reporting group       |  |
| Number of subjects analysed       | 72                    | 142                   | 144                   |  |
| Units: Percentage of participants |                       |                       |                       |  |
| number (confidence interval 95%)  | 22.2 (14.17 to 33.09) | 33.1 (25.89 to 41.19) | 40.3 (32.62 to 48.44) |  |

## Statistical analyses

|                            |  |
|----------------------------|--|
| Statistical analysis title | Etro vs. Placebo: Endoscopic Appearance at Week 10 |
|----------------------------|--|

Statistical analysis description:

Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. This comparison was part of Family 1 of the testing procedure; please refer to the statistical analysis plan for details.

|   |                              |
|---|------------------------------|
| Comparison groups                       | Placebo v Etrolizumab        |
| Number of subjects included in analysis | 216                          |
| Analysis specification                  | Pre-specified                |
| Analysis type                           | superiority <sup>[15]</sup>  |
| P-value                                 | = 0.0173 <sup>[16]</sup>     |
| Method                                  | Cochran-Mantel-Haenszel      |
| Parameter estimate                      | Difference in Response Rates |
| Point estimate                          | 17.9                         |

|                     |         |
|---------------------|---------|
| Confidence interval |         |
| level               | 95 %    |
| sides               | 2-sided |
| lower limit         | 4.49    |
| upper limit         | 29.5    |

Notes:

[15] - Difference and 95% CI adjusted for concomitant treatment with corticosteroids or immunosuppressants at baseline (BL) and MCS ( $\leq 9$  or  $\geq 10$ ) at BL. Difference in response rates was calculated as the etrolizumab arm minus the placebo arm.

[16] - p-value has been adjusted for multiplicity.

|                                   |   |
|-----------------------------------|---|
| <b>Statistical analysis title</b> | Etro vs. Ada.: Endoscopic Appearance at Week 10 |
|-----------------------------------|---|

Statistical analysis description:

Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. Please refer to the statistical analysis plan for details. This comparison was not considered a key secondary outcome measure and was not part of the multiple testing procedure for statistical significance.

|   |                              |
|---|------------------------------|
| Comparison groups                       | Adalimumab v Etrolizumab     |
| Number of subjects included in analysis | 286                          |
| Analysis specification                  | Pre-specified                |
| Analysis type                           | superiority <sup>[17]</sup>  |
| P-value                                 | = 0.1886 <sup>[18]</sup>     |
| Method                                  | Cochran-Mantel-Haenszel      |
| Parameter estimate                      | Difference in Response Rates |
| Point estimate                          | 7.4                          |
| Confidence interval                     |                              |
| level                                   | 95 %                         |
| sides                                   | 2-sided                      |
| lower limit                             | -3.77                        |
| upper limit                             | 18.32                        |

Notes:

[17] - Difference and 95% CI adjusted for concomitant treatment with corticosteroids or immunosuppressants at baseline (BL) and MCS ( $\leq 9$  or  $\geq 10$ ) at BL. Difference in response rates was calculated as the etrolizumab arm minus the adalimumab arm.

[18] - Nominal p-value; it has not been adjusted for multiplicity.

### **Secondary: Percentage of Participants With Improvement in Endoscopic Appearance of the Mucosa at Week 10 With Etrolizumab as Compared With Adalimumab, as Determined by the MCS Endoscopy Subscore, GA28948 & GA28949 Pooled Population**

|                 |  |
|-----------------|--|
| End point title | Percentage of Participants With Improvement in Endoscopic Appearance of the Mucosa at Week 10 With Etrolizumab as Compared With Adalimumab, as Determined by the MCS Endoscopy Subscore, GA28948 & GA28949 Pooled Population |
|-----------------|--|

End point description:

Improvement in endoscopic appearance of the mucosa was defined as a Mayo Clinic Score (MCS) endoscopy subscore  $\leq 1$ . Blinded gastroenterologists experienced in inflammatory bowel disease performed central reading of endoscopies at an independent review facility. The rectum, sigmoid, and descending colon segments were assessed and each segment was assigned a score of 0 to 3, with higher scores indicating more severe disease. At baseline all segments were reviewed and the worst score from the three segments was recorded as the endoscopy subscore. Post-baseline the endoscopy score was the worst score of all segments that had been assessed at baseline, if the baseline endoscopy score had a sigmoid colon score  $\leq 1$ . If at baseline the sigmoid colon score was  $\geq 2$ , the post-baseline endoscopy score was the sigmoid colon score value. Non-responders also included participants with missing Week 10 assessments or those who had received permitted/prohibited rescue therapy prior to assessment.

|                |           |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

Week 10

| <b>End point values</b>           | Adalimumab - GA28948 & GA28949 Pooled Population | Etrolizumab - GA28948 & GA28949 Pooled Population |  |  |
|-----------------------------------|--|---|--|--|
| Subject group type                | Subject analysis set                             | Subject analysis set                              |  |  |
| Number of subjects analysed       | 285  | 287   |  |  |
| Units: Percentage of participants |  |   |  |  |
| number (confidence interval 95%)  | 37.9 (32.46 to 43.65)                            | 40.1 (34.57 to 45.83)                             |  |  |

### Statistical analyses

| <b>Statistical analysis title</b> | Etro vs. Ada (Pooled): Endoscopic Appearance |
|-----------------------------------|--|
|-----------------------------------|--|

Statistical analysis description:

Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. This comparison was part of Family 3 of the testing procedure; please refer to the statistical analysis plan for details.

|   |  |
|---|--|
| Comparison groups                       | Adalimumab - GA28948 & GA28949 Pooled Population v Etrolizumab - GA28948 & GA28949 Pooled Population |
| Number of subjects included in analysis | 572  |
| Analysis specification                  | Pre-specified  |
| Analysis type                           | superiority <sup>[19]</sup>  |
| P-value                                 | = 1 <sup>[20]</sup>  |
| Method                                  | Cochran-Mantel-Haenszel  |
| Parameter estimate                      | Difference in Response Rates   |
| Point estimate                          | 1.9  |
| Confidence interval                     |  |
| level                                   | 95 %   |
| sides                                   | 2-sided  |
| lower limit                             | -6.04  |
| upper limit                             | 9.88   |

Notes:

[19] - Difference and 95% CI adjusted for concomitant treatment with corticosteroids or immunosuppressants at baseline (BL) and MCS ( $\leq 9$  or  $\geq 10$ ) at BL. Difference in response rates was calculated as the etrolizumab arm minus the adalimumab arm.

[20] - p-value has been adjusted for multiplicity.

### **Secondary: Percentage of Participants in Endoscopic Remission at Week 10, as Determined by the MCS Endoscopy Subscore, GA28948 Population**

|                 |  |
|-----------------|--|
| End point title | Percentage of Participants in Endoscopic Remission at Week 10, as Determined by the MCS Endoscopy Subscore, GA28948 Population |
|-----------------|--|

End point description:

Endoscopic remission was defined as a Mayo Clinic Score (MCS) endoscopy subscore of 0. Blinded gastroenterologists experienced in inflammatory bowel disease performed central reading of endoscopies at an independent review facility. The rectum, sigmoid, and descending colon segments were assessed and each segment was assigned a score of 0 to 3, with higher scores indicating more severe disease. At baseline all segments were reviewed and the worst score from the three segments

was recorded as the endoscopy subscore. Post-baseline the endoscopy score was the worst score of all segments that had been assessed at baseline, if the baseline endoscopy score had a sigmoid colon score  $\leq 1$ . If at baseline the sigmoid colon score was  $\geq 2$ , the post-baseline endoscopy score was the sigmoid colon score value. Non-responders also included participants with missing Week 10 assessments or those who had received permitted/prohibited rescue therapy prior to assessment.

|                      |           |
|----------------------|-----------|
| End point type       | Secondary |
| End point timeframe: |           |
| Week 10              |           |

| End point values                  | Placebo             | Adalimumab            | Etrolizumab           |  |
|-----------------------------------|---------------------|-----------------------|-----------------------|--|
| Subject group type                | Reporting group     | Reporting group       | Reporting group       |  |
| Number of subjects analysed       | 72                  | 142                   | 144                   |  |
| Units: Percentage of participants |                     |                       |                       |  |
| number (confidence interval 95%)  | 6.9 (3.00 to 15.25) | 20.4 (14.61 to 27.79) | 20.8 (15.00 to 28.18) |  |

## Statistical analyses

|                                   |   |
|-----------------------------------|---|
| <b>Statistical analysis title</b> | Etro vs. Placebo: Endoscopic Remission at Week 10 |
|-----------------------------------|---|

Statistical analysis description:

Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. This comparison was part of Family 2 of the testing procedure; please refer to the statistical analysis plan for details.

|   |                               |
|---|-------------------------------|
| Comparison groups                       | Placebo v Etrolizumab         |
| Number of subjects included in analysis | 216                           |
| Analysis specification                  | Pre-specified                 |
| Analysis type                           | superiority <sup>[21]</sup>   |
| P-value                                 | = 0.1347 <sup>[22]</sup>      |
| Method                                  | Cochran-Mantel-Haenszel       |
| Parameter estimate                      | Difference in Remission Rates |
| Point estimate                          | 13.8                          |
| Confidence interval                     |                               |
| level                                   | 95 %                          |
| sides                                   | 2-sided                       |
| lower limit                             | 2.97                          |
| upper limit                             | 22.15                         |

Notes:

[21] - Difference and 95% CI adjusted for concomitant treatment with corticosteroids or immunosuppressants at baseline (BL) and MCS ( $\leq 9$  or  $\geq 10$ ) at BL. Difference in remission rates was calculated as the etrolizumab arm minus the placebo arm.

[22] - p-value has been adjusted for multiplicity.

|                                   |  |
|-----------------------------------|--|
| <b>Statistical analysis title</b> | Etro vs. Ada.: Endoscopic Remission at Week 10 |
|-----------------------------------|--|

Statistical analysis description:

Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. Please refer to the statistical analysis plan for details. This comparison was not considered a key secondary outcome measure and was not part of the multiple testing procedure for statistical significance.

|                   |                          |
|-------------------|--------------------------|
| Comparison groups | Adalimumab v Etrolizumab |
|-------------------|--------------------------|

|   |                               |
|---|-------------------------------|
| Number of subjects included in analysis | 286                           |
| Analysis specification                  | Pre-specified                 |
| Analysis type                           | superiority <sup>[23]</sup>   |
| P-value                                 | = 0.9138 <sup>[24]</sup>      |
| Method                                  | Cochran-Mantel-Haenszel       |
| Parameter estimate                      | Difference in Remission Rates |
| Point estimate                          | 0.5                           |
| Confidence interval                     |                               |
| level                                   | 95 %                          |
| sides                                   | 2-sided                       |
| lower limit                             | -8.95                         |
| upper limit                             | 9.92                          |

Notes:

[23] - Difference and 95% CI adjusted for concomitant treatment with corticosteroids or immunosuppressants at baseline (BL) and MCS ( $\leq 9$  or  $\geq 10$ ) at BL. Difference in remission rates was calculated as the etrolizumab arm minus the adalimumab arm.

[24] - Nominal p-value; it has not been adjusted for multiplicity.

### **Secondary: Percentage of Participants in Endoscopic Remission at Week 10 With Etrolizumab as Compared With Adalimumab, as Determined by the MCS Endoscopy Subscore, GA28948 & GA28949 Pooled Population**

|                 |  |
|-----------------|--|
| End point title | Percentage of Participants in Endoscopic Remission at Week 10 With Etrolizumab as Compared With Adalimumab, as Determined by the MCS Endoscopy Subscore, GA28948 & GA28949 Pooled Population |
|-----------------|--|

End point description:

Endoscopic remission was defined as a Mayo Clinic Score (MCS) endoscopy subscore of 0. Blinded gastroenterologists experienced in inflammatory bowel disease performed central reading of endoscopies at an independent review facility. The rectum, sigmoid, and descending colon segments were assessed and each segment was assigned a score of 0 to 3, with higher scores indicating more severe disease. At baseline all segments were reviewed and the worst score from the three segments was recorded as the endoscopy subscore. Post-baseline the endoscopy score was the worst score of all segments that had been assessed at baseline, if the baseline endoscopy score had a sigmoid colon score  $\leq 1$ . If at baseline the sigmoid colon score was  $\geq 2$ , the post-baseline endoscopy score was the sigmoid colon score value. Non-responders also included participants with missing Week 10 assessments or those who had received permitted/prohibited rescue therapy prior to assessment.

|                |           |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

Week 10

| <b>End point values</b>           | Adalimumab - GA28948 & GA28949 Pooled Population | Etrolizumab - GA28948 & GA28949 Pooled Population |  |  |
|-----------------------------------|--|---|--|--|
| Subject group type                | Subject analysis set                             | Subject analysis set                              |  |  |
| Number of subjects analysed       | 285  | 287   |  |  |
| Units: Percentage of participants |  |   |  |  |
| number (confidence interval 95%)  | 23.5 (18.96 to 28.76)                            | 20.2 (15.97 to 25.23)                             |  |  |

### **Statistical analyses**

|   |  |
|---|--|
| <b>Statistical analysis title</b>   | Etro vs. Ada (Pooled): Endoscopic Remission  |
| Statistical analysis description:   |  |
| Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. This comparison was part of Family 5 of the testing procedure; please refer to the statistical analysis plan for details. |  |
| Comparison groups   | Adalimumab - GA28948 & GA28949 Pooled Population v Etrolizumab - GA28948 & GA28949 Pooled Population |
| Number of subjects included in analysis   | 572  |
| Analysis specification  | Pre-specified  |
| Analysis type   | superiority <sup>[25]</sup>  |
| P-value   | = 1 <sup>[26]</sup>  |
| Method  | Cochran-Mantel-Haenszel  |
| Parameter estimate  | Difference in Remission Rates  |
| Point estimate  | -3.5   |
| Confidence interval   |  |
| level   | 95 %   |
| sides   | 2-sided  |
| lower limit   | -10.27   |
| upper limit   | 3.3  |

Notes:

[25] - Difference and 95% CI adjusted for concomitant treatment with corticosteroids or immunosuppressants at baseline (BL) and MCS ( $\leq 9$  or  $\geq 10$ ) at BL. Difference in remission rates was calculated as the etrolizumab arm minus the adalimumab arm.

[26] - p-value has been adjusted for multiplicity.

### **Secondary: Percentage of Participants With Histologic Remission at Week 10, as Determined by the Nancy Histological Index, GA28948 Population**

|                 |  |
|-----------------|--|
| End point title | Percentage of Participants With Histologic Remission at Week 10, as Determined by the Nancy Histological Index, GA28948 Population |
|-----------------|--|

End point description:

Histologic remission is defined by the resolution of neutrophilic inflammation (e.g., absence of neutrophils in the crypts and lamina propria), defined by a Nancy Histological Index (NHI) score of  $\leq 1$ . The NHI score ranges from 0 to 4, with the following definitions for each grade: 0 is no histologically significant disease; 1 is chronic inflammatory infiltrate with no acute inflammatory infiltrate; and 2, 3, and 4 are mildly, moderately, and severely active disease, respectively. A small pool of central readers who were blinded to both treatment arm and timepoint performed the histologic scoring. The same reader scored all slides for a given participant based on biopsies from the most inflamed region of the sigmoid colon. Participants were also classified as non-remitters if Week 10 assessments were missing or if they had received rescue therapy prior to assessment. The Cochran-Mantel-Haenszel test adjusted the difference in remission rates and 95% CI for the stratification factors.

|                |           |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

Week 10

| <b>End point values</b>           | Placebo              | Adalimumab            | Etrolizumab           |  |
|-----------------------------------|----------------------|-----------------------|-----------------------|--|
| Subject group type                | Reporting group      | Reporting group       | Reporting group       |  |
| Number of subjects analysed       | 62 <sup>[27]</sup>   | 116 <sup>[28]</sup>   | 120 <sup>[29]</sup>   |  |
| Units: Percentage of participants |                      |                       |                       |  |
| number (confidence interval 95%)  | 16.1 (9.00 to 27.21) | 29.3 (21.80 to 38.15) | 42.5 (34.02 to 51.44) |  |

Notes:

[27] - All subjects in study GA28948 who had  $\geq 1$  dose of study drug and NHI score  $> 1$  at baseline

[28] - All subjects in study GA28948 who had  $\geq 1$  dose of study drug and NHI score  $> 1$  at baseline

[29] - All subjects in study GA28948 who had  $\geq 1$  dose of study drug and NHI score  $> 1$  at baseline

## Statistical analyses

|                                   |   |
|-----------------------------------|---|
| <b>Statistical analysis title</b> | Etro vs. Placebo: Histologic Remission at Week 10 |
|-----------------------------------|---|

Statistical analysis description:

Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. This comparison was part of Family 2 of the testing procedure; please refer to the statistical analysis plan for details.

|   |                               |
|---|-------------------------------|
| Comparison groups                       | Placebo v Etrolizumab         |
| Number of subjects included in analysis | 182                           |
| Analysis specification                  | Pre-specified                 |
| Analysis type                           | superiority <sup>[30]</sup>   |
| P-value                                 | = 0.0173 <sup>[31]</sup>      |
| Method                                  | Cochran-Mantel-Haenszel       |
| Parameter estimate                      | Difference in Remission Rates |
| Point estimate                          | 26.3                          |
| Confidence interval                     |                               |
| level                                   | 95 %                          |
| sides                                   | 2-sided                       |
| lower limit                             | 12.1                          |
| upper limit                             | 37.86                         |

Notes:

[30] - Difference and 95% CI adjusted for concomitant treatment with corticosteroids or immunosuppressants at baseline (BL) and MCS ( $\leq 9$  or  $\geq 10$ ) at BL. Difference in remission rates was calculated as the etrolizumab arm minus the placebo arm.

[31] - p-value has been adjusted for multiplicity.

|                                   |  |
|-----------------------------------|--|
| <b>Statistical analysis title</b> | Etro vs. Ada.: Histologic Remission at Week 10 |
|-----------------------------------|--|

Statistical analysis description:

Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. Please refer to the statistical analysis plan for details. This comparison was not considered a key secondary outcome measure and was not part of the multiple testing procedure for statistical significance.

|   |                               |
|---|-------------------------------|
| Comparison groups                       | Adalimumab v Etrolizumab      |
| Number of subjects included in analysis | 236                           |
| Analysis specification                  | Pre-specified                 |
| Analysis type                           | superiority <sup>[32]</sup>   |
| P-value                                 | = 0.0313 <sup>[33]</sup>      |
| Method                                  | Cochran-Mantel-Haenszel       |
| Parameter estimate                      | Difference in Remission Rates |
| Point estimate                          | 13.2                          |
| Confidence interval                     |                               |
| level                                   | 95 %                          |
| sides                                   | 2-sided                       |
| lower limit                             | 0.93                          |
| upper limit                             | 24.94                         |

Notes:

[32] - Difference and 95% CI adjusted for concomitant treatment with corticosteroids or immunosuppressants at baseline (BL) and MCS ( $\leq 9$  or  $\geq 10$ ) at BL. Difference in remission rates was calculated as the etrolizumab arm minus the adalimumab arm.

[33] - Nominal p-value; it has not been adjusted for multiplicity.

### Secondary: Percentage of Participants With Histologic Remission at Week 10 With Etrolizumab as Compared With Adalimumab, as Determined by the Nancy Histological Index, GA28948 & GA28949 Pooled Population

|                 |  |
|-----------------|--|
| End point title | Percentage of Participants With Histologic Remission at Week 10 With Etrolizumab as Compared With Adalimumab, as Determined by the Nancy Histological Index, GA28948 & GA28949 Pooled Population |
|-----------------|--|

End point description:

Histologic remission is defined by the resolution of neutrophilic inflammation (e.g., absence of neutrophils in the crypts and lamina propria), defined by a Nancy Histological Index (NHI) score of  $\leq 1$ . The NHI score ranges from 0 to 4, with the following definitions for each grade: 0 is no histologically significant disease; 1 is chronic inflammatory infiltrate with no acute inflammatory infiltrate; and 2, 3, and 4 are mildly, moderately, and severely active disease, respectively. A small pool of central readers who were blinded to both treatment arm and timepoint performed the histologic scoring. The same reader scored all slides for a given participant based on biopsies from the most inflamed region of the sigmoid colon. Participants were also classified as non-remitters if Week 10 assessments were missing or if they had received rescue therapy prior to assessment. The Cochran-Mantel-Haenszel test adjusted the difference in remission rates and 95% CI for the stratification factors.

|                      |           |
|----------------------|-----------|
| End point type       | Secondary |
| End point timeframe: | Week 10   |

| End point values                  | Adalimumab - GA28948 & GA28949 Pooled Population | Etrolizumab - GA28948 & GA28949 Pooled Population |  |  |
|-----------------------------------|--|---|--|--|
| Subject group type                | Subject analysis set                             | Subject analysis set                              |  |  |
| Number of subjects analysed       | 230 <sup>[34]</sup>                              | 228 <sup>[35]</sup>                               |  |  |
| Units: Percentage of participants |  |   |  |  |
| number (confidence interval 95%)  | 36.5 (30.57 to 42.92)                            | 36.8 (30.85 to 43.27)                             |  |  |

Notes:

[34] - All subjects in studies GA28948 & GA28949 who had  $\geq 1$  dose of study drug and NHI score  $> 1$  at baseline

[35] - All subjects in studies GA28948 & GA28949 who had  $\geq 1$  dose of study drug and NHI score  $> 1$  at baseline

### Statistical analyses

|                            |   |
|----------------------------|---|
| Statistical analysis title | Etro vs. Ada (Pooled): Histologic Remission |
|----------------------------|---|

Statistical analysis description:

Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. This comparison was part of Family 5 of the testing procedure; please refer to the statistical analysis plan for details.

|                   |  |
|-------------------|--|
| Comparison groups | Adalimumab - GA28948 & GA28949 Pooled Population v Etrolizumab - GA28948 & GA28949 Pooled Population |
|-------------------|--|

|   |                               |
|---|-------------------------------|
| Number of subjects included in analysis | 458                           |
| Analysis specification                  | Pre-specified                 |
| Analysis type                           | superiority <sup>[36]</sup>   |
| P-value                                 | = 1 <sup>[37]</sup>           |
| Method                                  | Cochran-Mantel-Haenszel       |
| Parameter estimate                      | Difference in Remission Rates |
| Point estimate                          | -0.3                          |
| Confidence interval                     |                               |
| level                                   | 95 %                          |
| sides                                   | 2-sided                       |
| lower limit                             | -9.13                         |
| upper limit                             | 8.45                          |

Notes:

[36] - Difference and 95% CI adjusted for concomitant treatment with corticosteroids or immunosuppressants at baseline (BL) and MCS ( $\leq 9$  or  $\geq 10$ ) at BL. Difference in remission rates was calculated as the etrolizumab arm minus the adalimumab arm.

[37] - p-value has been adjusted for multiplicity.

### Secondary: Change from Baseline in the MCS Rectal Bleeding Subscore at Week 6, GA28948 Population

|                 |  |
|-----------------|--|
| End point title | Change from Baseline in the MCS Rectal Bleeding Subscore at Week 6, GA28948 Population |
|-----------------|--|

End point description:

Rectal bleeding data were collected via the participant's diaries and each day a participant provided a score from 0 to 3 according to the following definitions: 0 = no blood in the stool; 1 = streaks of blood with stool less than half the time; 2 = obvious blood with stool most of the time; 3 = blood alone passed. The Mayo Clinic Score (MCS) rectal bleeding subscore was calculated as the worst value of three days of daily diary scores closest to anchor dates at baseline and post-baseline. The data was considered non-parametric and was reported using RANK analysis of covariance (ANCOVA). Participants were stratified by concomitant treatment with corticosteroids or immunosuppressants at randomization and disease activity measured during screening (MCS  $\leq 9$ /MCS  $\geq 10$ ); the model adjusted for these stratification factors along with the baseline rectal bleeding (RB) subscore.

|                |           |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

Baseline, Week 6

| End point values                      | Placebo            | Adalimumab         | Etrolizumab        |  |
|---------------------------------------|--------------------|--------------------|--------------------|--|
| Subject group type                    | Reporting group    | Reporting group    | Reporting group    |  |
| Number of subjects analysed           | 72                 | 142                | 144                |  |
| Units: Score on a scale               |                    |                    |                    |  |
| median (inter-quartile range (Q1-Q3)) | -1.0 (-1.0 to 0.0) | -1.0 (-2.0 to 0.0) | -1.0 (-2.0 to 0.0) |  |

### Statistical analyses

|                            |   |
|----------------------------|---|
| Statistical analysis title | Etro vs. Placebo: MCS Rectal Bleeding at Week 6 |
|----------------------------|---|

Statistical analysis description:

Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. This comparison was part of Family 2 of the testing procedure; please refer to the statistical analysis plan for details.

|                   |                       |
|-------------------|-----------------------|
| Comparison groups | Placebo v Etrolizumab |
|-------------------|-----------------------|

|   |                             |
|---|-----------------------------|
| Number of subjects included in analysis | 216                         |
| Analysis specification                  | Pre-specified               |
| Analysis type                           | superiority <sup>[38]</sup> |
| P-value                                 | = 0.4434 <sup>[39]</sup>    |
| Method                                  | Rank ANCOVA                 |

Notes:

[38] - Model adjusted for concomitant treatment with corticosteroids or immunosuppressants at baseline (BL), MCS ( $\leq 9$  or  $\geq 10$ ) at BL, and RB score at BL.

[39] - p-value has been adjusted for multiplicity.

|                                   |  |
|-----------------------------------|--|
| <b>Statistical analysis title</b> | Etro vs. Ada.: MCS Rectal Bleeding at Week 6 |
|-----------------------------------|--|

Statistical analysis description:

Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. Please refer to the statistical analysis plan for details. This comparison was not considered a key secondary outcome measure and was not part of the multiple testing procedure for statistical significance.

|   |                             |
|---|-----------------------------|
| Comparison groups                       | Adalimumab v Etrolizumab    |
| Number of subjects included in analysis | 286                         |
| Analysis specification                  | Pre-specified               |
| Analysis type                           | superiority <sup>[40]</sup> |
| P-value                                 | = 0.3374 <sup>[41]</sup>    |
| Method                                  | Rank ANCOVA                 |

Notes:

[40] - Model adjusted for concomitant treatment with corticosteroids or immunosuppressants at baseline (BL), MCS ( $\leq 9$  or  $\geq 10$ ) at BL, and RB score at BL.

[41] - Nominal p-value; it has not been adjusted for multiplicity.

### **Secondary: Change from Baseline in the MCS Rectal Bleeding Subscore at Week 6 With Etrolizumab as Compared With Adalimumab, GA28948 & GA28949 Pooled Population**

|                 |  |
|-----------------|--|
| End point title | Change from Baseline in the MCS Rectal Bleeding Subscore at Week 6 With Etrolizumab as Compared With Adalimumab, GA28948 & GA28949 Pooled Population |
|-----------------|--|

End point description:

Rectal bleeding data were collected via the participant's diaries and each day a participant provided a score from 0 to 3 according to the following definitions: 0 = no blood in the stool; 1 = streaks of blood with stool less than half the time; 2 = obvious blood with stool most of the time; 3 = blood alone passed. The Mayo Clinic Score (MCS) rectal bleeding subscore was calculated as the worst value of three days of daily diary scores closest to anchor dates at baseline and post-baseline. The data was considered non-parametric and was reported using RANK analysis of covariance (ANCOVA). Participants were stratified by concomitant treatment with corticosteroids or immunosuppressants at randomization and disease activity measured during screening (MCS  $\leq 9$ /MCS  $\geq 10$ ); the model adjusted for these stratification factors along with the baseline rectal bleeding (RB) subscore.

|                |           |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

Baseline, Week 6

| <b>End point values</b>     | Adalimumab - GA28948 & GA28949 Pooled Population | Etrolizumab - GA28948 & GA28949 Pooled Population |  |  |
|-----------------------------|--|---|--|--|
| Subject group type          | Subject analysis set                             | Subject analysis set                              |  |  |
| Number of subjects analysed | 285  | 287   |  |  |
| Units: Score on a scale     |  |   |  |  |

|                                       |                    |                    |  |  |
|---------------------------------------|--------------------|--------------------|--|--|
| median (inter-quartile range (Q1-Q3)) | -1.0 (-2.0 to 0.0) | -1.0 (-2.0 to 0.0) |  |  |
|---------------------------------------|--------------------|--------------------|--|--|

## Statistical analyses

|                                   |  |
|-----------------------------------|--|
| <b>Statistical analysis title</b> | Etro vs. Ada (Pooled): MCS Rectal Bleeding |
|-----------------------------------|--|

Statistical analysis description:

Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. This comparison was part of Family 5 of the testing procedure; please refer to the statistical analysis plan for details.

|   |  |
|---|--|
| Comparison groups                       | Adalimumab - GA28948 & GA28949 Pooled Population v Etrolizumab - GA28948 & GA28949 Pooled Population |
| Number of subjects included in analysis | 572  |
| Analysis specification                  | Pre-specified  |
| Analysis type                           | superiority <sup>[42]</sup>  |
| P-value                                 | = 1 <sup>[43]</sup>  |
| Method                                  | Rank ANCOVA  |

Notes:

[42] - Model adjusted for concomitant treatment with corticosteroids or immunosuppressants at baseline (BL), MCS ( $\leq 9$  or  $\geq 10$ ) at BL, and RB score at BL.

[43] - p-value has been adjusted for multiplicity.

## Secondary: Change from Baseline in the MCS Stool Frequency Subscore at Week 6, GA28948 Population

|                 |  |
|-----------------|--|
| End point title | Change from Baseline in the MCS Stool Frequency Subscore at Week 6, GA28948 Population |
|-----------------|--|

End point description:

Stool frequency data were collected via the participant's diaries and each day a participant provided a score from 0 to 3 according to the following definitions: 0 = normal number of stools; 1 = 1 to 2 more stools than normal; 2 = 3 to 4 more stools than normal; 3 = 5 or more stools than normal. The Mayo Clinic Score (MCS) stool frequency subscore was calculated as the average of three days daily diary scores closest to anchor dates at baseline and post-baseline. The data was considered non-parametric and was reported using RANK analysis of covariance (ANCOVA). Participants were stratified by concomitant treatment with corticosteroids or immunosuppressants at randomization and disease activity measured during screening (MCS  $\leq 9$ /MCS  $\geq 10$ ); the model adjusted for these stratification factors along with the baseline stool frequency (SF) subscore.

|                |           |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

Baseline, Week 6

| End point values                      | Placebo           | Adalimumab         | Etrolizumab        |  |
|---------------------------------------|-------------------|--------------------|--------------------|--|
| Subject group type                    | Reporting group   | Reporting group    | Reporting group    |  |
| Number of subjects analysed           | 72                | 142                | 144                |  |
| Units: Score on a scale               |                   |                    |                    |  |
| median (inter-quartile range (Q1-Q3)) | 0.0 (-1.0 to 0.0) | -1.0 (-2.0 to 0.0) | -1.0 (-2.0 to 0.0) |  |

## Statistical analyses

|                                   |   |
|-----------------------------------|---|
| <b>Statistical analysis title</b> | Etro vs. Placebo: MCS Stool Frequency at Week 6 |
|-----------------------------------|---|

Statistical analysis description:

Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. This comparison was part of Family 2 of the testing procedure; please refer to the statistical analysis plan for details.

|   |                             |
|---|-----------------------------|
| Comparison groups                       | Placebo v Etrolizumab       |
| Number of subjects included in analysis | 216                         |
| Analysis specification                  | Pre-specified               |
| Analysis type                           | superiority <sup>[44]</sup> |
| P-value                                 | = 0.4434 <sup>[45]</sup>    |
| Method                                  | Rank ANCOVA                 |

Notes:

[44] - Model adjusted for concomitant treatment with corticosteroids or immunosuppressants at baseline (BL), MCS ( $\leq 9$  or  $\geq 10$ ) at BL, and SF score at BL.

[45] - p-value has been adjusted for multiplicity.

|                                   |  |
|-----------------------------------|--|
| <b>Statistical analysis title</b> | Etro vs. Ada.: MCS Stool Frequency at Week 6 |
|-----------------------------------|--|

Statistical analysis description:

Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. Please refer to the statistical analysis plan for details. This comparison was not considered a key secondary outcome measure and was not part of the multiple testing procedure for statistical significance.

|   |                             |
|---|-----------------------------|
| Comparison groups                       | Adalimumab v Etrolizumab    |
| Number of subjects included in analysis | 286                         |
| Analysis specification                  | Pre-specified               |
| Analysis type                           | superiority <sup>[46]</sup> |
| P-value                                 | = 0.6367 <sup>[47]</sup>    |
| Method                                  | Rank ANCOVA                 |

Notes:

[46] - Model adjusted for concomitant treatment with corticosteroids or immunosuppressants at baseline (BL), MCS ( $\leq 9$  or  $\geq 10$ ) at BL, and SF score at BL.

[47] - Nominal p-value; it has not been adjusted for multiplicity.

### **Secondary: Change from Baseline in the MCS Stool Frequency Subscore at Week 6 With Etrolizumab as Compared With Adalimumab, GA28948 & GA28949 Pooled Population**

|                 |  |
|-----------------|--|
| End point title | Change from Baseline in the MCS Stool Frequency Subscore at Week 6 With Etrolizumab as Compared With Adalimumab, GA28948 & GA28949 Pooled Population |
|-----------------|--|

End point description:

Stool frequency data were collected via the participant's diaries and each day a participant provided a score from 0 to 3 according to the following definitions: 0 = normal number of stools; 1 = 1 to 2 more stools than normal; 2 = 3 to 4 more stools than normal; 3 = 5 or more stools than normal. The Mayo Clinic Score (MCS) stool frequency subscore was calculated as the average of three days daily diary scores closest to anchor dates at baseline and post-baseline. The data was considered non-parametric and was reported using RANK analysis of covariance (ANCOVA). Participants were stratified by concomitant treatment with corticosteroids or immunosuppressants at randomization and disease activity measured during screening (MCS  $\leq 9$ /MCS  $\geq 10$ ); the model adjusted for these stratification factors along with the baseline stool frequency (SF) subscore.

|                |           |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

Baseline, Week 6

|                                       |  |  |  |  |
|---------------------------------------|--|--|--|--|
| <b>End point values</b>               | Adalimumab - GA28948 & GA28949 Pooled Population | Etolizumab - GA28948 & GA28949 Pooled Population |  |  |
| Subject group type                    | Subject analysis set                             | Subject analysis set                             |  |  |
| Number of subjects analysed           | 285  | 287  |  |  |
| Units: Score on a scale               |  |  |  |  |
| median (inter-quartile range (Q1-Q3)) | -1.0 (-1.0 to 0.0)                               | -1.0 (-1.0 to 0.0)                               |  |  |

## Statistical analyses

|                                   |  |
|-----------------------------------|--|
| <b>Statistical analysis title</b> | Etro vs. Ada (Pooled): MCS Stool Frequency |
|-----------------------------------|--|

Statistical analysis description:

Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. This comparison was part of Family 5 of the testing procedure; please refer to the statistical analysis plan for details.

|   |   |
|---|---|
| Comparison groups                       | Adalimumab - GA28948 & GA28949 Pooled Population v Etolizumab - GA28948 & GA28949 Pooled Population |
| Number of subjects included in analysis | 572   |
| Analysis specification                  | Pre-specified   |
| Analysis type                           | superiority <sup>[48]</sup>   |
| P-value                                 | = 1 <sup>[49]</sup>   |
| Method                                  | Rank ANCOVA   |

Notes:

[48] - Model adjusted for concomitant treatment with corticosteroids or immunosuppressants at baseline (BL), MCS ( $\leq 9$  or  $\geq 10$ ) at BL, and SF score at BL.

[49] - p-value has been adjusted for multiplicity.

## Secondary: Change From Baseline in Ulcerative Colitis (UC) Bowel Movement Signs and Symptoms at Week 10, as Assessed by the UC Patient-Reported Outcome Signs and Symptoms (UC-PRO/SS), GA28948 Population

|                 |   |
|-----------------|---|
| End point title | Change From Baseline in Ulcerative Colitis (UC) Bowel Movement Signs and Symptoms at Week 10, as Assessed by the UC Patient-Reported Outcome Signs and Symptoms (UC-PRO/SS), GA28948 Population |
|-----------------|---|

End point description:

The UC-PRO/SS questionnaire was collected in the e-diary and completed by participants for at least 9 to 12 consecutive days prior to a study visit. The bowel movement domain score ranges from 0 to 27, with a higher score indicating a worse disease state. The most recent 7 daily scores available (not including the visit) were selected for the calculation of the visit score. For each item in the questionnaire, a score was calculated for a visit by taking the average of the selected daily scores. The domain score for a visit was calculated as the sum of the averaged items for each question. A Mixed Model for Repeated Measures (MMRM) analysis of the data included the fixed categorical effects of treatment, visit, study stratification factors, and treatment-by-visit interaction, and the continuous covariates of the baseline UC-PRO/SS domain and baseline UC-PRO/SS domain-by-visit interaction. An unstructured covariance matrix was used to model the within-patient errors within the MMRM.

|                |           |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

Baseline, Week 10

| <b>End point values</b>             | Placebo            | Adalimumab          | Etrolizumab         |  |
|-------------------------------------|--------------------|---------------------|---------------------|--|
| Subject group type                  | Reporting group    | Reporting group     | Reporting group     |  |
| Number of subjects analysed         | 50 <sup>[50]</sup> | 106 <sup>[51]</sup> | 117 <sup>[52]</sup> |  |
| Units: Score on a scale             |                    |                     |                     |  |
| least squares mean (standard error) | -5.5 (± 0.7)       | -5.7 (± 0.5)        | -6.2 (± 0.5)        |  |

Notes:

[50] - All subjects in study GA28948 with a baseline result and ≥1 post-baseline result

[51] - All subjects in study GA28948 with a baseline result and ≥1 post-baseline result

[52] - All subjects in study GA28948 with a baseline result and ≥1 post-baseline result

## Statistical analyses

| <b>Statistical analysis title</b> | Etro vs. Placebo: UC Bowel Movement SS at Week 10 |
|-----------------------------------|---|
|-----------------------------------|---|

Statistical analysis description:

Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. Please refer to the statistical analysis plan for details. This comparison was not considered a key secondary outcome measure and was not part of the multiple testing procedure for statistical significance.

|   |                                   |
|---|-----------------------------------|
| Comparison groups                       | Placebo v Etrolizumab             |
| Number of subjects included in analysis | 167                               |
| Analysis specification                  | Pre-specified                     |
| Analysis type                           | superiority <sup>[53]</sup>       |
| P-value                                 | = 0.3708 <sup>[54]</sup>          |
| Method                                  | Mixed Model for Repeated Measures |
| Parameter estimate                      | Mean difference (net)             |
| Point estimate                          | -0.7                              |
| Confidence interval                     |                                   |
| level                                   | 95 %                              |
| sides                                   | 2-sided                           |
| lower limit                             | -2.4                              |
| upper limit                             | 0.9                               |

Notes:

[53] - Model adjusted for treatment, visit, stratification factors, treatment-by-visit, baseline UC-PRO/SS domain, and baseline UC-PRO/SS domain-by-visit. Mean difference was calculated as etrolizumab arm minus placebo arm.

[54] - Nominal p-value; it has not been adjusted for multiplicity.

| <b>Statistical analysis title</b> | Etro vs. Ada.: UC Bowel Movement SS at Week 10 |
|-----------------------------------|--|
|-----------------------------------|--|

Statistical analysis description:

Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. Please refer to the statistical analysis plan for details. This comparison was not considered a key secondary outcome measure and was not part of the multiple testing procedure for statistical significance.

|   |                                   |
|---|-----------------------------------|
| Comparison groups                       | Adalimumab v Etrolizumab          |
| Number of subjects included in analysis | 223                               |
| Analysis specification                  | Pre-specified                     |
| Analysis type                           | superiority <sup>[55]</sup>       |
| P-value                                 | = 0.4477 <sup>[56]</sup>          |
| Method                                  | Mixed Model for Repeated Measures |
| Parameter estimate                      | Mean difference (net)             |
| Point estimate                          | -0.5                              |

|                     |         |
|---------------------|---------|
| Confidence interval |         |
| level               | 95 %    |
| sides               | 2-sided |
| lower limit         | -1.8    |
| upper limit         | 0.8     |

Notes:

[55] - Model adjusted for treatment, visit, stratification factors, treatment-by-visit, baseline UC-PRO/SS domain, and baseline UC-PRO/SS domain-by-visit. Mean difference was calculated as etrolizumab arm minus adalimumab arm.

[56] - Nominal p-value; it has not been adjusted for multiplicity.

**Secondary: Change From Baseline in Ulcerative Colitis Bowel Movement Signs and Symptoms at Week 10, as Assessed by the UC-PRO/SS, GA28948 & GA28949 Pooled Population**

|                 |  |
|-----------------|--|
| End point title | Change From Baseline in Ulcerative Colitis Bowel Movement Signs and Symptoms at Week 10, as Assessed by the UC-PRO/SS, GA28948 & GA28949 Pooled Population |
|-----------------|--|

End point description:

The UC-PRO/SS questionnaire was collected in the e-diary and completed by participants for at least 9 to 12 consecutive days prior to a study visit. The bowel movement domain score ranges from 0 to 27, with a higher score indicating a worse disease state. The most recent 7 daily scores available (not including the visit) were selected for the calculation of the visit score. For each item in the questionnaire, a score was calculated for a visit by taking the average of the selected daily scores. The domain score for a visit was calculated as the sum of the averaged items for each question. A Mixed Model for Repeated Measures (MMRM) analysis of the data included the fixed categorical effects of treatment, visit, study stratification factors, and treatment-by-visit interaction, and the continuous covariates of the baseline UC-PRO/SS domain and baseline UC-PRO/SS domain-by-visit interaction. An unstructured covariance matrix was used to model the within-patient errors within the MMRM.

|                |           |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

Baseline, Week 10

| End point values                    | Placebo - GA28948 & GA28949 Pooled Population | Adalimumab - GA28948 & GA28949 Pooled Population | Etrolizumab - GA28948 & GA28949 Pooled Population |  |
|-------------------------------------|---|--|---|--|
| Subject group type                  | Subject analysis set                          | Subject analysis set                             | Subject analysis set                              |  |
| Number of subjects analysed         | 109 <sup>[57]</sup>                           | 217 <sup>[58]</sup>                              | 225 <sup>[59]</sup>                               |  |
| Units: Score on a scale             |   |  |   |  |
| least squares mean (standard error) | -5.0 (± 0.5)                                  | -5.8 (± 0.4)                                     | -6.0 (± 0.3)                                      |  |

Notes:

[57] - All subjects in studies GA28948 & GA28949 with a baseline result and ≥1 post-baseline result

[58] - All subjects in studies GA28948 & GA28949 with a baseline result and ≥1 post-baseline result

[59] - All subjects in studies GA28948 & GA28949 with a baseline result and ≥1 post-baseline result

**Statistical analyses**

|                            |   |
|----------------------------|---|
| Statistical analysis title | Etro vs. Pbo (Pooled): UC Bowel Movement SS |
|----------------------------|---|

Statistical analysis description:

Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. This comparison was part of Family 4 of the testing procedure; please refer to the statistical analysis plan for details.

|                   |   |
|-------------------|---|
| Comparison groups | Placebo - GA28948 & GA28949 Pooled Population v Etrolizumab - GA28948 & GA28949 Pooled Population |
|-------------------|---|

|   |                                   |
|---|-----------------------------------|
| Number of subjects included in analysis | 334                               |
| Analysis specification                  | Pre-specified                     |
| Analysis type                           | superiority <sup>[60]</sup>       |
| P-value                                 | = 1 <sup>[61]</sup>               |
| Method                                  | Mixed Model for Repeated Measures |
| Parameter estimate                      | Mean difference (net)             |
| Point estimate                          | -1                                |
| Confidence interval                     |                                   |
| level                                   | 95 %                              |
| sides                                   | 2-sided                           |
| lower limit                             | -2.1                              |
| upper limit                             | 0.2                               |

Notes:

[60] - Model adjusted for treatment, visit, stratification factors, treatment-by-visit, baseline UC-PRO/SS domain, and baseline UC-PRO/SS domain-by-visit. Mean difference was calculated as etrolizumab arm minus placebo arm.

[61] - p-value has been adjusted for multiplicity.

|                                   |   |
|-----------------------------------|---|
| <b>Statistical analysis title</b> | Etro vs. Ada (Pooled): UC Bowel Movement SS |
|-----------------------------------|---|

Statistical analysis description:

Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. This comparison was part of Family 6 of the testing procedure; please refer to the statistical analysis plan for details.

|   |  |
|---|--|
| Comparison groups                       | Adalimumab - GA28948 & GA28949 Pooled Population v Etrolizumab - GA28948 & GA28949 Pooled Population |
| Number of subjects included in analysis | 442  |
| Analysis specification                  | Pre-specified  |
| Analysis type                           | superiority <sup>[62]</sup>  |
| P-value                                 | = 1 <sup>[63]</sup>  |
| Method                                  | Mixed Model for Repeated Measures  |
| Parameter estimate                      | Mean difference (net)  |
| Point estimate                          | -0.3   |
| Confidence interval                     |  |
| level                                   | 95 %   |
| sides                                   | 2-sided  |
| lower limit                             | -1.2   |
| upper limit                             | 0.7  |

Notes:

[62] - Model adjusted for treatment, visit, stratification factors, treatment-by-visit, baseline UC-PRO/SS domain, and baseline UC-PRO/SS domain-by-visit. Mean difference was calculated as etrolizumab arm minus adalimumab arm.

[63] - p-value has been adjusted for multiplicity.

### **Secondary: Change From Baseline in Ulcerative Colitis Functional Symptoms at Week 10, as Assessed by the UC-PRO/SS, GA28948 Population**

|                 |   |
|-----------------|---|
| End point title | Change From Baseline in Ulcerative Colitis Functional Symptoms at Week 10, as Assessed by the UC-PRO/SS, GA28948 Population |
|-----------------|---|

End point description:

The UC-PRO/SS questionnaire was collected in the e-diary and completed by participants for at least 9 to 12 consecutive days prior to a study visit. The functional symptoms domain score ranges from 0 to 12, with a higher score indicating a worse disease state. The most recent 7 daily scores available (not including the visit) were selected for the calculation of the visit score. For each item in the questionnaire, a score was calculated for a visit by taking the average of the selected daily scores. The domain score for a visit was calculated as the sum of the averaged items for each question. A Mixed Model for Repeated Measures (MMRM) analysis of the data included the fixed categorical effects of treatment, visit, study stratification factors, and treatment-by-visit interaction, and the continuous

covariates of the baseline UC-PRO/SS domain and baseline UC-PRO/SS domain-by-visit interaction. An unstructured covariance matrix was used to model the within-patient errors in the MMRM.

|                |           |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

Baseline, Week 10

| End point values                    | Placebo            | Adalimumab          | Etrolizumab         |  |
|-------------------------------------|--------------------|---------------------|---------------------|--|
| Subject group type                  | Reporting group    | Reporting group     | Reporting group     |  |
| Number of subjects analysed         | 50 <sup>[64]</sup> | 106 <sup>[65]</sup> | 117 <sup>[66]</sup> |  |
| Units: Score on a scale             |                    |                     |                     |  |
| least squares mean (standard error) | -1.7 (± 0.3)       | -1.5 (± 0.2)        | -1.9 (± 0.2)        |  |

Notes:

[64] - All subjects in study GA28948 with a baseline result and ≥1 post-baseline result

[65] - All subjects in study GA28948 with a baseline result and ≥1 post-baseline result

[66] - All subjects in study GA28948 with a baseline result and ≥1 post-baseline result

## Statistical analyses

|                                   |   |
|-----------------------------------|---|
| <b>Statistical analysis title</b> | Etro vs. Placebo: UC Functional SS at Week 10 |
|-----------------------------------|---|

Statistical analysis description:

Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. Please refer to the statistical analysis plan for details. This comparison was not considered a key secondary outcome measure and was not part of the multiple testing procedure for statistical significance.

|   |                                   |
|---|-----------------------------------|
| Comparison groups                       | Placebo v Etrolizumab             |
| Number of subjects included in analysis | 167                               |
| Analysis specification                  | Pre-specified                     |
| Analysis type                           | superiority <sup>[67]</sup>       |
| P-value                                 | = 0.6356 <sup>[68]</sup>          |
| Method                                  | Mixed Model for Repeated Measures |
| Parameter estimate                      | Mean difference (net)             |
| Point estimate                          | -0.2                              |
| Confidence interval                     |                                   |
| level                                   | 95 %                              |
| sides                                   | 2-sided                           |
| lower limit                             | -0.9                              |
| upper limit                             | 0.5                               |

Notes:

[67] - Model adjusted for treatment, visit, stratification factors, treatment-by-visit, baseline UC-PRO/SS domain, and baseline UC-PRO/SS domain-by-visit. Mean difference was calculated as etrolizumab arm minus placebo arm.

[68] - Nominal p-value; it has not been adjusted for multiplicity.

|                                   |  |
|-----------------------------------|--|
| <b>Statistical analysis title</b> | Etro vs. Ada.: UC Functional SS at Week 10 |
|-----------------------------------|--|

Statistical analysis description:

Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. Please refer to the statistical analysis plan for details. This comparison was not considered a key secondary outcome measure and was not part of the multiple testing procedure for statistical significance.

|                   |                          |
|-------------------|--------------------------|
| Comparison groups | Adalimumab v Etrolizumab |
|-------------------|--------------------------|

|   |                                   |
|---|-----------------------------------|
| Number of subjects included in analysis | 223                               |
| Analysis specification                  | Pre-specified                     |
| Analysis type                           | superiority <sup>[69]</sup>       |
| P-value                                 | = 0.1253 <sup>[70]</sup>          |
| Method                                  | Mixed Model for Repeated Measures |
| Parameter estimate                      | Mean difference (net)             |
| Point estimate                          | -0.4                              |
| Confidence interval                     |                                   |
| level                                   | 95 %                              |
| sides                                   | 2-sided                           |
| lower limit                             | -1                                |
| upper limit                             | 0.1                               |

Notes:

[69] - Model adjusted for treatment, visit, stratification factors, treatment-by-visit, baseline UC-PRO/SS domain, and baseline UC-PRO/SS domain-by-visit. Mean difference was calculated as etrolizumab arm minus adalimumab arm.

[70] - Nominal p-value; it has not been adjusted for multiplicity.

### **Secondary: Change From Baseline in Ulcerative Colitis Functional Symptoms at Week 10, as Assessed by the UC-PRO/SS, GA28948 & GA28949 Pooled Population**

|                 |  |
|-----------------|--|
| End point title | Change From Baseline in Ulcerative Colitis Functional Symptoms at Week 10, as Assessed by the UC-PRO/SS, GA28948 & GA28949 Pooled Population |
|-----------------|--|

End point description:

The UC-PRO/SS questionnaire was collected in the e-diary and completed by participants for at least 9 to 12 consecutive days prior to a study visit. The functional symptoms domain score ranges from 0 to 12, with a higher score indicating a worse disease state. The most recent 7 daily scores available (not including the visit) were selected for the calculation of the visit score. For each item in the questionnaire, a score was calculated for a visit by taking the average of the selected daily scores. The domain score for a visit was calculated as the sum of the averaged items for each question. A Mixed Model for Repeated Measures (MMRM) analysis of the data included the fixed categorical effects of treatment, visit, study stratification factors, and treatment-by-visit interaction, and the continuous covariates of the baseline UC-PRO/SS domain and baseline UC-PRO/SS domain-by-visit interaction. An unstructured covariance matrix was used to model the within-patient errors in the MMRM.

|                |           |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

Baseline, Week 10

| <b>End point values</b>             | Placebo - GA28948 & GA28949 Pooled Population | Adalimumab - GA28948 & GA28949 Pooled Population | Etrolizumab - GA28948 & GA28949 Pooled Population |  |
|-------------------------------------|---|--|---|--|
| Subject group type                  | Subject analysis set                          | Subject analysis set                             | Subject analysis set                              |  |
| Number of subjects analysed         | 109 <sup>[71]</sup>                           | 217 <sup>[72]</sup>                              | 225 <sup>[73]</sup>                               |  |
| Units: Score on a scale             |   |  |   |  |
| least squares mean (standard error) | -1.4 (± 0.2)                                  | -1.6 (± 0.2)                                     | -1.9 (± 0.2)                                      |  |

Notes:

[71] - All subjects in studies GA28948 & GA28949 with a baseline result and ≥1 post-baseline result

[72] - All subjects in studies GA28948 & GA28949 with a baseline result and ≥1 post-baseline result

[73] - All subjects in studies GA28948 & GA28949 with a baseline result and ≥1 post-baseline result

### **Statistical analyses**

|   |   |
|---|---|
| <b>Statistical analysis title</b>   | Etro vs. Pbo (Pooled): UC Functional SS   |
| Statistical analysis description:   |   |
| Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. This comparison was part of Family 4 of the testing procedure; please refer to the statistical analysis plan for details. |   |
| Comparison groups   | Placebo - GA28948 & GA28949 Pooled Population v Etrolizumab - GA28948 & GA28949 Pooled Population |
| Number of subjects included in analysis   | 334   |
| Analysis specification  | Pre-specified   |
| Analysis type   | superiority <sup>[74]</sup>   |
| P-value   | = 1 <sup>[75]</sup>   |
| Method  | Mixed Model for Repeated Measures   |
| Parameter estimate  | Mean difference (net)   |
| Point estimate  | -0.5  |
| Confidence interval   |   |
| level   | 95 %  |
| sides   | 2-sided   |
| lower limit   | -1  |
| upper limit   | 0   |

Notes:

[74] - Model adjusted for treatment, visit, stratification factors, treatment-by-visit, baseline UC-PRO/SS domain, and baseline UC-PRO/SS domain-by-visit. Mean difference was calculated as etrolizumab arm minus placebo arm.

[75] - p-value has been adjusted for multiplicity.

|   |  |
|---|--|
| <b>Statistical analysis title</b>   | Etro vs. Ada (Pooled): UC Functional SS  |
| Statistical analysis description:   |  |
| Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. This comparison was part of Family 6 of the testing procedure; please refer to the statistical analysis plan for details. |  |
| Comparison groups   | Adalimumab - GA28948 & GA28949 Pooled Population v Etrolizumab - GA28948 & GA28949 Pooled Population |
| Number of subjects included in analysis   | 442  |
| Analysis specification  | Pre-specified  |
| Analysis type   | superiority <sup>[76]</sup>  |
| P-value   | = 1 <sup>[77]</sup>  |
| Method  | Mixed Model for Repeated Measures  |
| Parameter estimate  | Mean difference (net)  |
| Point estimate  | -0.3   |
| Confidence interval   |  |
| level   | 95 %   |
| sides   | 2-sided  |
| lower limit   | -0.7   |
| upper limit   | 0.1  |

Notes:

[76] - Model adjusted for treatment, visit, stratification factors, treatment-by-visit, baseline UC-PRO/SS domain, and baseline UC-PRO/SS domain-by-visit. Mean difference was calculated as etrolizumab arm minus adalimumab arm.

[77] - p-value has been adjusted for multiplicity.

### **Secondary: Percentage of Participants in Clinical Remission at Week 10, as Determined by the MCS, GA28948 Population**

|                 |   |
|-----------------|---|
| End point title | Percentage of Participants in Clinical Remission at Week 10, as Determined by the MCS, GA28948 Population |
|-----------------|---|

**End point description:**

The Mayo Clinic Score (MCS) ranges from 0 to 12 and is a composite of the four following assessments of disease activity: stool frequency subscore, rectal bleeding subscore, endoscopy subscore, and physician's global assessment (PGA) subscore. Each of the four assessments was rated with a score from 0 to 3, with higher scores indicating more severe disease. Clinical remission was defined as MCS less than or equal to ( $\leq$ )2 with individual subscores  $\leq$ 1. Participants were also classified as non-remitters if Week 10 assessments were missing or if they had received permitted/prohibited rescue therapy prior to assessment. Participants were stratified by concomitant treatment with corticosteroids or immunosuppressants at randomization and disease activity measured during screening (MCS  $\leq$ 9/MCS  $\geq$ 10). The Cochran-Mantel-Haenszel test adjusted the differences in remission rates and associated 95% confidence intervals for the stratification factors.

|                |           |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

**End point timeframe:**

Week 10

| <b>End point values</b>           | Placebo             | Adalimumab            | Etrolizumab           |  |
|-----------------------------------|---------------------|-----------------------|-----------------------|--|
| Subject group type                | Reporting group     | Reporting group       | Reporting group       |  |
| Number of subjects analysed       | 72                  | 142                   | 144                   |  |
| Units: Percentage of participants |                     |                       |                       |  |
| number (confidence interval 95%)  | 8.3 (3.88 to 17.01) | 23.9 (17.67 to 31.59) | 19.4 (13.81 to 26.67) |  |

**Statistical analyses**

|                                   |   |
|-----------------------------------|---|
| <b>Statistical analysis title</b> | Etro vs. Placebo: Clinical Remission at Week 10 |
|-----------------------------------|---|

**Statistical analysis description:**

Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. Please refer to the statistical analysis plan for details. This comparison was not considered a key secondary outcome measure and was not part of the multiple testing procedure for statistical significance.

|   |                               |
|---|-------------------------------|
| Comparison groups                       | Placebo v Etrolizumab         |
| Number of subjects included in analysis | 216                           |
| Analysis specification                  | Pre-specified                 |
| Analysis type                           | superiority <sup>[78]</sup>   |
| P-value                                 | = 0.0364 <sup>[79]</sup>      |
| Method                                  | Cochran-Mantel-Haenszel       |
| Parameter estimate                      | Difference in Remission Rates |
| Point estimate                          | 10.9                          |
| Confidence interval                     |                               |
| level                                   | 95 %                          |
| sides                                   | 2-sided                       |
| lower limit                             | -0.08                         |
| upper limit                             | 19.48                         |

**Notes:**

[78] - Difference and 95% CI adjusted for concomitant treatment with corticosteroids or immunosuppressants at baseline (BL) and MCS ( $\leq$ 9 or  $\geq$ 10) at BL. Difference in remission rates was calculated as the etrolizumab arm minus the placebo arm.

[79] - Nominal p-value; it has not been adjusted for multiplicity.

|                                   |  |
|-----------------------------------|--|
| <b>Statistical analysis title</b> | Etro vs. Adalimumab: Clinical Remission at Week 10 |
|-----------------------------------|--|

Statistical analysis description:

Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. Please refer to the statistical analysis plan for details. This comparison was not considered a key secondary outcome measure and was not part of the multiple testing procedure for statistical significance.

|   |                               |
|---|-------------------------------|
| Comparison groups                       | Adalimumab v Etrolizumab      |
| Number of subjects included in analysis | 286                           |
| Analysis specification                  | Pre-specified                 |
| Analysis type                           | superiority <sup>[80]</sup>   |
| P-value                                 | = 0.3383 <sup>[81]</sup>      |
| Method                                  | Cochran-Mantel-Haenszel       |
| Parameter estimate                      | Difference in Remission Rates |
| Point estimate                          | -4.5                          |
| Confidence interval                     |                               |
| level                                   | 95 %                          |
| sides                                   | 2-sided                       |
| lower limit                             | -14.1                         |
| upper limit                             | 5.07                          |

Notes:

[80] - Difference and 95% CI adjusted for concomitant treatment with corticosteroids or immunosuppressants at baseline (BL) and MCS ( $\leq 9$  or  $\geq 10$ ) at BL. Difference in remission rates was calculated as the etrolizumab arm minus the adalimumab arm.

[81] - Nominal p-value; it has not been adjusted for multiplicity.

**Secondary: Percentage of Participants in Remission at Week 10 and Week 14, as Determined by the MCS, GA28948 Population**

|                 |  |
|-----------------|--|
| End point title | Percentage of Participants in Remission at Week 10 and Week 14, as Determined by the MCS, GA28948 Population |
|-----------------|--|

End point description:

The Mayo Clinic Score (MCS) ranges from 0 to 12 and is a composite of the four following assessments of disease activity: stool frequency subscore, rectal bleeding subscore, endoscopy subscore, and physician's global assessment (PGA) subscore. Each of the four assessments was rated with a score from 0 to 3, with higher scores indicating more severe disease. Remission was defined as MCS less than or equal to ( $\leq$ ) 2 with individual subscores  $\leq 1$  and a rectal bleeding subscore of 0. Participants were also classified as non-remitters if Week 10 or 14 assessments were missing or the participant received permitted/prohibited rescue therapy prior to assessment. Participants were stratified by concomitant treatment with corticosteroids or immunosuppressants at randomization and disease activity measured during screening (MCS  $\leq 9$ /MCS  $\geq 10$ ). The Cochran-Mantel-Haenszel test adjusted the differences in remission rates and associated 95% confidence intervals for the stratification factors.

|                |           |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

Weeks 10 and 14

| End point values                  | Placebo            | Adalimumab           | Etrolizumab         |  |
|-----------------------------------|--------------------|----------------------|---------------------|--|
| Subject group type                | Reporting group    | Reporting group      | Reporting group     |  |
| Number of subjects analysed       | 72                 | 142                  | 144                 |  |
| Units: Percentage of participants |                    |                      |                     |  |
| number (confidence interval 95%)  | 2.8 (0.77 to 9.57) | 12.7 (8.17 to 19.15) | 9.0 (5.35 to 14.83) |  |

## Statistical analyses

|                                   |  |
|-----------------------------------|--|
| <b>Statistical analysis title</b> | Etro vs. Placebo: Remission at Weeks 10 and 14 |
|-----------------------------------|--|

Statistical analysis description:

Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. Please refer to the statistical analysis plan for details. This comparison was not considered a key secondary outcome measure and was not part of the multiple testing procedure for statistical significance.

|   |                               |
|---|-------------------------------|
| Comparison groups                       | Placebo v Etrolizumab         |
| Number of subjects included in analysis | 216                           |
| Analysis specification                  | Pre-specified                 |
| Analysis type                           | superiority <sup>[82]</sup>   |
| P-value                                 | = 0.09 <sup>[83]</sup>        |
| Method                                  | Cochran-Mantel-Haenszel       |
| Parameter estimate                      | Difference in Remission Rates |
| Point estimate                          | 6.2                           |
| Confidence interval                     |                               |
| level                                   | 95 %                          |
| sides                                   | 2-sided                       |
| lower limit                             | -3.33                         |
| upper limit                             | 12.3                          |

Notes:

[82] - Difference and 95% CI adjusted for concomitant treatment with corticosteroids or immunosuppressants at baseline (BL) and MCS ( $\leq 9$  or  $\geq 10$ ) at BL. Difference in remission rates was calculated as the etrolizumab arm minus the placebo arm.

[83] - Nominal p-value; it has not been adjusted for multiplicity.

|                                   |   |
|-----------------------------------|---|
| <b>Statistical analysis title</b> | Etro vs. Ada.: Remission at Weeks 10 and 14 |
|-----------------------------------|---|

Statistical analysis description:

Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. Please refer to the statistical analysis plan for details. This comparison was not considered a key secondary outcome measure and was not part of the multiple testing procedure for statistical significance.

|   |                               |
|---|-------------------------------|
| Comparison groups                       | Adalimumab v Etrolizumab      |
| Number of subjects included in analysis | 286                           |
| Analysis specification                  | Pre-specified                 |
| Analysis type                           | superiority <sup>[84]</sup>   |
| P-value                                 | = 0.3217 <sup>[85]</sup>      |
| Method                                  | Cochran-Mantel-Haenszel       |
| Parameter estimate                      | Difference in Remission Rates |
| Point estimate                          | -3.6                          |
| Confidence interval                     |                               |
| level                                   | 95 %                          |
| sides                                   | 2-sided                       |
| lower limit                             | -11.07                        |
| upper limit                             | 3.78                          |

Notes:

[84] - Difference and 95% CI adjusted for concomitant treatment with corticosteroids or immunosuppressants at baseline (BL) and MCS ( $\leq 9$  or  $\geq 10$ ) at BL. Difference in remission rates was calculated as the etrolizumab arm minus the adalimumab arm.

[85] - Nominal p-value; it has not been adjusted for multiplicity.

### **Secondary: Change From Baseline in Health-Related Quality of Life at Week 10, as Assessed by the Total Inflammatory Bowel Disease Questionnaire (IBDQ) Score, GA28948 Population**

|                 |  |
|-----------------|--|
| End point title | Change From Baseline in Health-Related Quality of Life at Week |
|-----------------|--|

## End point description:

The IBDQ is a 32-item questionnaire containing four domains: bowel symptoms (10 items), systemic symptoms (5 items), emotional function (12 items), and social function (5 items). An overall total IBDQ score was computed by summing the individual 32-item scores. The range for the IBDQ total score is 32 to 224, with higher scores denoting better health-related quality of life. The unadjusted mean and standard deviation for each study arm are reported. The change from baseline in the IBDQ score was analyzed using an ANCOVA model taking the stratification factors used at randomization into account (concomitant treatment with corticosteroids or immunosuppressants at randomization and disease activity measured during screening [MCS  $\leq$ 9/MCS  $\geq$ 10]), and the baseline IBDQ score used as a covariate.

|                |           |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

Baseline, Week 10

| End point values                     | Placebo            | Adalimumab          | Etrolizumab         |  |
|--------------------------------------|--------------------|---------------------|---------------------|--|
| Subject group type                   | Reporting group    | Reporting group     | Reporting group     |  |
| Number of subjects analysed          | 63 <sup>[86]</sup> | 127 <sup>[87]</sup> | 124 <sup>[88]</sup> |  |
| Units: Score on a scale              |                    |                     |                     |  |
| arithmetic mean (standard deviation) | 38.4 ( $\pm$ 35.7) | 39.2 ( $\pm$ 32.8)  | 39.8 ( $\pm$ 35.3)  |  |

Notes:

[86] - All subjects in study GA28948 with a baseline result and  $\geq$ 1 post-baseline result[87] - All subjects in study GA28948 with a baseline result and  $\geq$ 1 post-baseline result[88] - All subjects in study GA28948 with a baseline result and  $\geq$ 1 post-baseline result**Statistical analyses**

|                                   |  |
|-----------------------------------|--|
| <b>Statistical analysis title</b> | Etro vs. Placebo: IBDQ Change at Week 10 |
|-----------------------------------|--|

Statistical analysis description:

Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. Please refer to the statistical analysis plan for details. This comparison was not considered a key secondary outcome measure and was not part of the multiple testing procedure for statistical significance.

|   |                              |
|---|------------------------------|
| Comparison groups                       | Placebo v Etrolizumab        |
| Number of subjects included in analysis | 187                          |
| Analysis specification                  | Pre-specified                |
| Analysis type                           | superiority <sup>[89]</sup>  |
| P-value                                 | = 0.7919 <sup>[90]</sup>     |
| Method                                  | ANCOVA                       |
| Parameter estimate                      | Difference in Adjusted Means |
| Point estimate                          | 1.3                          |
| Confidence interval                     |                              |
| level                                   | 95 %                         |
| sides                                   | 2-sided                      |
| lower limit                             | -8.3                         |
| upper limit                             | 10.8                         |

Notes:

[89] - Model adjusted for concomitant treatment with corticosteroids or immunosuppressants at baseline (BL), MCS ( $\leq$ 9 or  $\geq$ 10) at BL, and IBDQ score at BL. Mean difference was calculated as etrolizumab arm minus placebo arm.

[90] - Nominal p-value; it has not been adjusted for multiplicity.

|                                   |                                       |
|-----------------------------------|---------------------------------------|
| <b>Statistical analysis title</b> | Etro vs. Ada.: IBDQ Change at Week 10 |
|-----------------------------------|---------------------------------------|

Statistical analysis description:

Primary and secondary outcome measures were evaluated for statistical significance in a hierarchical manner with a component-wise multistage gatekeeping procedure. Please refer to the statistical analysis plan for details. This comparison was not considered a key secondary outcome measure and was not part of the multiple testing procedure for statistical significance.

|   |                              |
|---|------------------------------|
| Comparison groups                       | Adalimumab v Etrolizumab     |
| Number of subjects included in analysis | 251                          |
| Analysis specification                  | Pre-specified                |
| Analysis type                           | superiority <sup>[91]</sup>  |
| P-value                                 | = 0.8327 <sup>[92]</sup>     |
| Method                                  | ANCOVA                       |
| Parameter estimate                      | Difference in Adjusted Means |
| Point estimate                          | -0.8                         |
| Confidence interval                     |                              |
| level                                   | 95 %                         |
| sides                                   | 2-sided                      |
| lower limit                             | -8.7                         |
| upper limit                             | 7                            |

Notes:

[91] - Model adjusted for concomitant treatment with corticosteroids or immunosuppressants at baseline (BL), MCS ( $\leq 9$  or  $\geq 10$ ) at BL, and IBDQ score at BL. Mean difference was calculated as etrolizumab arm minus adalimumab arm.

[92] - Nominal p-value; it has not been adjusted for multiplicity.

### **Secondary: Pharmacokinetics of Etrolizumab: Serum Concentration, GA28948 Population**

|                 |  |
|-----------------|--|
| End point title | Pharmacokinetics of Etrolizumab: Serum Concentration, GA28948 Population <sup>[93]</sup> |
|-----------------|--|

End point description:

Serum concentrations of etrolizumab were evaluated at the primary endpoint visit (Week 10) and the secondary endpoint visit (Week 14). Both time points were two weeks after the most recent dose. The GA28948 Pharmacokinetics Evaluable Population includes participants in study GA28948 who had received at least one dose of study drug and had at least one quantifiable concentration measured post-baseline. Only participants who were treated with etrolizumab were included in this analysis.

|                |           |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

Weeks 10 and 14

Notes:

[93] - The end point is not reporting statistics for all the arms in the baseline period. It is expected all the baseline period arms will be reported on when providing values for an end point on the baseline period.

Justification: The PK outcome measure of etrolizumab serum concentration was only assessed in participants who had received treatment with etrolizumab.

| <b>End point values</b>                               | Etrolizumab        |  |  |  |
|---|--------------------|--|--|--|
| Subject group type                                    | Reporting group    |  |  |  |
| Number of subjects analysed                           | 143                |  |  |  |
| Units: micrograms per millilitre ( $\mu\text{g/mL}$ ) |                    |  |  |  |
| arithmetic mean (standard deviation)                  |                    |  |  |  |
| Week 10 (n = 142)                                     | 13.0 ( $\pm$ 5.84) |  |  |  |
| Week 14 (n = 12)                                      | 17.1 ( $\pm$ 8.10) |  |  |  |

## Statistical analyses

No statistical analyses for this end point

### Secondary: Number of Participants With at Least One Adverse Event by Severity, According to the National Cancer Institute Common Terminology Criteria for Adverse Events, version 4.0 (NCI CTCAE v4.0), GA28948 Population

|                 |   |
|-----------------|---|
| End point title | Number of Participants With at Least One Adverse Event by Severity, According to the National Cancer Institute Common Terminology Criteria for Adverse Events, version 4.0 (NCI CTCAE v4.0), GA28948 Population |
|-----------------|---|

End point description:

An adverse event (AE) is any untoward medical occurrence in a clinical investigation in which a patient is administered a pharmaceutical product, regardless of causal attribution. The investigator independently assessed the severity and seriousness of each recorded AE. The AE severity grading scale for the NCI CTCAE v4.0 was used for assessing severity; any AE not specifically listed was rated according to the following grading scale from 1 to 5: 1 = mild, 2 = moderate, 3 = severe, 4 = life-threatening, 5 = death. AEs of special interest included: elevated AST/ALT in combination with either elevated bilirubin or clinical jaundice; suspected transmission of infectious agent by the study drug; anaphylactic, anaphylactoid and systemic hypersensitivity reactions; and neurological signs, symptoms, and AEs that may suggest possible progressive multifocal leukoencephalopathy (PML).

|                |           |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

From Baseline until the end of study (up to 26 weeks)

| End point values                              | Placebo         | Adalimumab      | Etrolizumab     |  |
|---|-----------------|-----------------|-----------------|--|
| Subject group type                            | Reporting group | Reporting group | Reporting group |  |
| Number of subjects analysed                   | 72              | 142             | 144             |  |
| Units: Participants                           |                 |                 |                 |  |
| Any Adverse Event (AE)                        | 26              | 61              | 50              |  |
| AE with Fatal Outcome                         | 0               | 0               | 1               |  |
| Serious AE                                    | 2               | 3               | 8               |  |
| AE Leading to Study Treatment Discontinuation | 0               | 2               | 2               |  |
| AE Leading to Dose Interruption               | 0               | 1               | 3               |  |
| Related AE                                    | 4               | 14              | 10              |  |
| AE by Worst Severity, Grade 1                 | 11              | 33              | 21              |  |
| AE by Worst Severity, Grade 2                 | 13              | 22              | 18              |  |
| AE by Worst Severity, Grade 3                 | 2               | 6               | 9               |  |
| AE by Worst Severity, Grade 4                 | 0               | 0               | 1               |  |
| AE by Worst Severity, Grade 5                 | 0               | 0               | 1               |  |
| Any AEs of Special Interest                   | 0               | 0               | 0               |  |
| Confirmed PML                                 | 0               | 0               | 0               |  |
| Infections                                    | 7               | 17              | 15              |  |
| Serious Infections                            | 2               | 0               | 2               |  |
| Gastrointestinal Infections                   | 1               | 0               | 1               |  |
| Opportunistic Infections                      | 0               | 0               | 0               |  |
| Malignancies                                  | 0               | 0               | 0               |  |
| Injection Site Reactions                      | 0               | 4               | 1               |  |

## Statistical analyses

No statistical analyses for this end point

### Secondary: Number of Participants by Marked Laboratory Abnormality Status for Hematology Parameters as a Shift Table from Baseline to Week 10, GA28948 Population

|                 |  |
|-----------------|--|
| End point title | Number of Participants by Marked Laboratory Abnormality Status for Hematology Parameters as a Shift Table from Baseline to Week 10, GA28948 Population |
|-----------------|--|

End point description:

Laboratory tests for hematology parameters were performed and values were compared with the Roche marked reference range. A marked abnormality was defined as a test result that was outside of the Roche marked reference range (labelled as 'High' or 'Low') and represented a clinically significant change from baseline. Not every laboratory abnormality qualified as an adverse event. A laboratory test result must have been reported as an adverse event if it met any of the following criteria: was accompanied by clinical symptoms; resulted in a change in study treatment or a medical intervention; or was clinically significant in the investigator's judgment. The results are presented as a shift from the baseline status to the Week 10 status. Baseline was defined as the last available assessment prior to first receipt of study drug. The 'missing' status only included participants with missing post-baseline values given they had a result at baseline. Abs = absolute count; Ery. = erythrocyte

|                |           |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

From Baseline up to Week 10

| End point values                    | Placebo         | Adalimumab      | Etrolizumab     |  |
|-------------------------------------|-----------------|-----------------|-----------------|--|
| Subject group type                  | Reporting group | Reporting group | Reporting group |  |
| Number of subjects analysed         | 72              | 142             | 144             |  |
| Units: Participants                 |                 |                 |                 |  |
| Eosinophils Abs - Normal to Normal  | 66              | 130             | 130             |  |
| Eosinophils Abs - Normal to High    | 0               | 0               | 1               |  |
| Eosinophils Abs - Normal to Missing | 6               | 11              | 9               |  |
| Eosinophils Abs - High to Normal    | 0               | 1               | 4               |  |
| Hematocrit - Low to Low             | 0               | 0               | 2               |  |
| Hematocrit - Low to Normal          | 0               | 5               | 3               |  |
| Hematocrit - Normal to Low          | 3               | 1               | 2               |  |
| Hematocrit - Normal to Normal       | 63              | 122             | 124             |  |
| Hematocrit - Normal to High         | 0               | 1               | 0               |  |
| Hematocrit - Normal to Missing      | 6               | 13              | 12              |  |
| Hematocrit - High to Normal         | 0               | 0               | 1               |  |
| Hemoglobin - Low to Low             | 4               | 15              | 11              |  |
| Hemoglobin - Low to Normal          | 4               | 5               | 9               |  |
| Hemoglobin - Low to Missing         | 2               | 0               | 1               |  |
| Hemoglobin - Normal to Low          | 6               | 2               | 5               |  |
| Hemoglobin - Normal to Normal       | 52              | 109             | 110             |  |
| Hemoglobin - Normal to Missing      | 4               | 11              | 8               |  |
| Lymphocytes Abs - Low to Low        | 0               | 0               | 2               |  |
| Lymphocytes Abs - Low to Normal     | 1               | 3               | 7               |  |
| Lymphocytes Abs - Normal to Low     | 1               | 2               | 1               |  |
| Lymphocytes Abs - Normal to Normal  | 64              | 126             | 125             |  |
| Lymphocytes Abs - Normal to Missing | 6               | 11              | 9               |  |

|  |    |     |     |  |
|--|----|-----|-----|--|
| Ery. Mean Corpuscular Volume - Normal to Normal  | 66 | 129 | 132 |  |
| Ery. Mean Corpuscular Volume - Normal to Missing | 6  | 13  | 12  |  |
| Neutrophils, Total, Abs - Low to Normal          | 3  | 1   | 2   |  |
| Neutrophils, Total, Abs - Normal to Low          | 1  | 5   | 0   |  |
| Neutrophils, Total, Abs - Normal to Normal       | 58 | 115 | 118 |  |
| Neutrophils, Total, Abs - Normal to High         | 1  | 3   | 5   |  |
| Neutrophils, Total, Abs - Normal to Missing      | 6  | 11  | 8   |  |
| Neutrophils, Total, Abs - High to Normal         | 2  | 4   | 9   |  |
| Neutrophils, Total, Abs - High to High           | 1  | 3   | 1   |  |
| Neutrophils, Total, Abs - High to Missing        | 0  | 0   | 1   |  |
| Platelets - Normal to Normal                     | 60 | 120 | 122 |  |
| Platelets - Normal to High                       | 3  | 5   | 4   |  |
| Platelets - Normal to Missing                    | 8  | 13  | 12  |  |
| Platelets - High to Normal                       | 1  | 0   | 4   |  |
| Platelets - High to High                         | 0  | 4   | 1   |  |
| White Blood Cell Count - Low to Normal           | 0  | 0   | 1   |  |
| White Blood Cell Count - Normal to Low           | 1  | 3   | 2   |  |
| White Blood Cell Count - Normal to Normal        | 65 | 127 | 132 |  |
| White Blood Cell Count - Normal to Missing       | 6  | 11  | 9   |  |
| White Blood Cell Count - High to Normal          | 0  | 1   | 0   |  |

## Statistical analyses

No statistical analyses for this end point

## Secondary: Number of Participants by Marked Laboratory Abnormality Status for Chemistry Parameters as a Shift Table from Baseline to Week 10, GA28948 Population

|                 |   |
|-----------------|---|
| End point title | Number of Participants by Marked Laboratory Abnormality Status for Chemistry Parameters as a Shift Table from Baseline to Week 10, GA28948 Population |
|-----------------|---|

End point description:

Laboratory tests for chemistry parameters were performed and values were compared with the Roche marked reference range. A marked abnormality was defined as a test result that was outside of the Roche marked reference range (labelled as 'High' or 'Low') and represented a clinically significant change from baseline. Not every laboratory abnormality qualified as an adverse event. A laboratory test result must have been reported as an adverse event if it met any of the following criteria: was accompanied by clinical symptoms; resulted in a change in study treatment or a medical intervention; or was clinically significant in the investigator's judgment. The results are presented as a shift from the baseline status to the Week 10 status. Baseline was defined as the last available assessment prior to first receipt of study drug. The 'missing' status only included participants with missing post-baseline values given they had a result at baseline.

|                |           |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

From Baseline up to Week 10

| <b>End point values</b>                        | Placebo         | Adalimumab      | Etrolizumab     |  |
|--|-----------------|-----------------|-----------------|--|
| Subject group type                             | Reporting group | Reporting group | Reporting group |  |
| Number of subjects analysed                    | 72              | 142             | 144             |  |
| Units: Participants                            |                 |                 |                 |  |
| Albumin - Low to Low                           | 0               | 3               | 0               |  |
| Albumin - Low to Normal                        | 0               | 2               | 1               |  |
| Albumin - Normal to Low                        | 0               | 1               | 0               |  |
| Albumin - Normal to Normal                     | 69              | 132             | 137             |  |
| Albumin - Normal to Missing                    | 3               | 4               | 6               |  |
| Alkaline Phosphatase - Normal to Normal        | 67              | 139             | 138             |  |
| Alkaline Phosphatase - Normal to High          | 1               | 0               | 0               |  |
| Alkaline Phosphatase - Normal to Missing       | 3               | 3               | 6               |  |
| Alkaline Phosphatase - High to High            | 1               | 0               | 0               |  |
| Alanine Aminotransferase - Normal to Normal    | 68              | 137             | 138             |  |
| Alanine Aminotransferase - Normal to High      | 1               | 0               | 0               |  |
| Alanine Aminotransferase - Normal to Missing   | 3               | 4               | 6               |  |
| Alanine Aminotransferase - High to Normal      | 0               | 1               | 0               |  |
| Aspartate Aminotransferase - Normal to Normal  | 67              | 137             | 137             |  |
| Aspartate Aminotransferase - Normal to High    | 1               | 0               | 0               |  |
| Aspartate Aminotransferase - Normal to Missing | 4               | 4               | 7               |  |
| Aspartate Aminotransferase - High to Normal    | 0               | 1               | 0               |  |
| Bicarbonate (CO2) - Low to Low                 | 0               | 0               | 1               |  |
| Bicarbonate (CO2) - Low to Normal              | 1               | 3               | 1               |  |
| Bicarbonate (CO2) - Normal to Low              | 8               | 9               | 6               |  |
| Bicarbonate (CO2) - Normal to Normal           | 55              | 118             | 123             |  |
| Bicarbonate (CO2) - Normal to High             | 0               | 0               | 1               |  |
| Bicarbonate (CO2) - Normal to Missing          | 4               | 5               | 6               |  |
| Bicarbonate (CO2) - High to Normal             | 4               | 5               | 6               |  |
| Bicarbonate (CO2) - High to High               | 0               | 1               | 0               |  |
| Bicarbonate (CO2) - High to Missing            | 0               | 1               | 0               |  |
| Blood Urea Nitrogen - Normal to Normal         | 69              | 138             | 138             |  |
| Blood Urea Nitrogen - Normal to Missing        | 3               | 3               | 6               |  |
| Blood Urea Nitrogen - High to Normal           | 0               | 1               | 0               |  |
| Calcium - Low to Normal                        | 0               | 0               | 1               |  |
| Calcium - Normal to Normal                     | 69              | 139             | 137             |  |
| Calcium - Normal to Missing                    | 3               | 3               | 6               |  |
| Chloride - Low to Low                          | 0               | 1               | 0               |  |
| Chloride - Low to Missing                      | 1               | 0               | 0               |  |
| Chloride - Normal to Low                       | 2               | 0               | 1               |  |
| Chloride - Normal to Normal                    | 67              | 137             | 137             |  |
| Chloride - Normal to Missing                   | 2               | 4               | 6               |  |
| Creatinine - Normal to Normal                  | 69              | 139             | 138             |  |
| Creatinine - Normal to Missing                 | 3               | 3               | 6               |  |
| Direct Bilirubin - Normal to Normal            | 68              | 134             | 134             |  |
| Direct Bilirubin - Normal to Missing           | 4               | 8               | 10              |  |

|                                     |    |     |     |  |
|-------------------------------------|----|-----|-----|--|
| Potassium - Normal to Normal        | 69 | 139 | 137 |  |
| Potassium - Normal to Missing       | 3  | 3   | 7   |  |
| Sodium - Normal to Normal           | 68 | 139 | 137 |  |
| Sodium - Normal to High             | 1  | 0   | 1   |  |
| Sodium - Normal to Missing          | 2  | 3   | 6   |  |
| Sodium - High to Missing            | 1  | 0   | 0   |  |
| Total Bilirubin - Normal to Normal  | 68 | 136 | 137 |  |
| Total Bilirubin - Normal to High    | 1  | 2   | 1   |  |
| Total Bilirubin - Normal to Missing | 3  | 4   | 6   |  |
| Protein, Total - Low to Normal      | 0  | 1   | 1   |  |
| Protein, Total - Normal to Low      | 0  | 1   | 0   |  |
| Protein, Total - Normal to Normal   | 67 | 132 | 136 |  |
| Protein, Total - Normal to High     | 2  | 5   | 0   |  |
| Protein, Total - Normal to Missing  | 3  | 3   | 6   |  |
| Protein, Total - High to High       | 0  | 0   | 1   |  |

## Statistical analyses

No statistical analyses for this end point

### Secondary: Number of Participants With Anti-Drug Antibodies (ADAs) to Etrolizumab at Baseline and Anytime Post-Baseline, GA28948 Population

|                 |  |
|-----------------|--|
| End point title | Number of Participants With Anti-Drug Antibodies (ADAs) to Etrolizumab at Baseline and Anytime Post-Baseline, GA28948 Population <sup>[94]</sup> |
|-----------------|--|

End point description:

Anti-drug antibody (ADA) serum samples were collected from participants and analyzed using validated assays. Participants were considered to be ADA positive post-baseline if they were ADA negative or had missing data at baseline, but developed an ADA response following etrolizumab drug exposure (treatment-induced ADA response), or if they were ADA positive at baseline and the titer of one or more post-baseline samples was at least 0.60 titer units greater than the titer of the baseline sample (treatment-enhanced ADA response). Participants were considered to be ADA negative if they were ADA negative or had missing data at baseline and all post-baseline samples were negative, or if they were ADA positive at baseline but did not have any post-baseline samples with a titer that was at least 0.60 titer unit greater than the titer of the baseline sample (treatment unaffected).

|                |           |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

Pre-dose (0 hour) on Day 1 and Week 4, Week 10, Week 14, and early termination/end of safety follow-up (up to 26 weeks)

Notes:

[94] - The end point is not reporting statistics for all the arms in the baseline period. It is expected all the baseline period arms will be reported on when providing values for an end point on the baseline period.

Justification: The immunogenicity outcome measure of ADAs to etrolizumab at baseline and postbaseline was only assessed in participants who had received treatment with etrolizumab.

| End point values                   | Etrolizumab     |  |  |  |
|------------------------------------|-----------------|--|--|--|
| Subject group type                 | Reporting group |  |  |  |
| Number of subjects analysed        | 144             |  |  |  |
| Units: Participants                |                 |  |  |  |
| Positive for ADAs at Baseline (BL) | 6               |  |  |  |
| Negative for ADAs at BL            | 138             |  |  |  |

|   |     |  |  |  |
|---|-----|--|--|--|
| Post-BL: Positive for Treatment Emergent ADAs | 27  |  |  |  |
| Post-BL ADA Positive: Treatment-Induced ADAs  | 27  |  |  |  |
| Post-BL ADA Positive: Treatment-Enhanced ADAs | 0   |  |  |  |
| Post-BL: Negative for Treatment Emergent ADAs | 117 |  |  |  |
| Post-BL ADA Negative: Treatment Unaffected    | 6   |  |  |  |

## Statistical analyses

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No statistical analyses for this end point

## Adverse events

### Adverse events information

Timeframe for reporting adverse events:

From Baseline until the end of study (up to 26 weeks)

Adverse event reporting additional description:

The adverse events reported here are those that occurred only in participants enrolled in study GA28948 who received at least one dose of study drug. For the adverse events that occurred in participants enrolled in the identically designed study, GA28949, please refer to its study record, 2013-004277-27.

|                 |            |
|-----------------|------------|
| Assessment type | Systematic |
|-----------------|------------|

### Dictionary used

|                 |        |
|-----------------|--------|
| Dictionary name | MedDRA |
|-----------------|--------|

|                    |      |
|--------------------|------|
| Dictionary version | 23.0 |
|--------------------|------|

### Reporting groups

|                       |         |
|-----------------------|---------|
| Reporting group title | Placebo |
|-----------------------|---------|

Reporting group description:

The double-blinded treatment period consisted of a 10-week induction period and an additional 4-week treatment period for participants who met the definition of clinical remission at Week 10. Participants with moderate-to-severe ulcerative colitis who were naive to TNF inhibitors were randomized to this arm to receive placebo matching to etrolizumab subcutaneously (SC) once every 4 weeks (Q4W) up to Week 12 (Weeks 0 [Day 1], 4, 8, and 12 [clinical remitters only]) and placebo matching to adalimumab SC once every 2 weeks (Q2W) up to Week 8 (Weeks 0 [Day 1], 2, 4, 6, and 8).

|                       |             |
|-----------------------|-------------|
| Reporting group title | Etrolizumab |
|-----------------------|-------------|

Reporting group description:

The double-blinded treatment period consisted of a 10-week induction period and an additional 4-week treatment period for participants who met the definition of clinical remission at Week 10. Participants with moderate-to-severe ulcerative colitis who were naive to TNF inhibitors were randomized to this arm to receive etrolizumab 105 mg subcutaneously (SC) Q4W up to Week 12 (Weeks 0 [Day 1], 4, 8, and 12 [clinical remitters only]) and placebo matching to adalimumab SC Q2W up to Week 8 (Weeks 0 [Day 1], 2, 4, 6, and 8).

|                       |            |
|-----------------------|------------|
| Reporting group title | Adalimumab |
|-----------------------|------------|

Reporting group description:

The double-blinded treatment period consisted of a 10-week induction period and an additional 4-week treatment period for participants who met the definition of clinical remission at Week 10. Participants with moderate-to-severe ulcerative colitis who were naive to TNF inhibitors were randomized to this arm to receive adalimumab subcutaneously (SC) Q2W up to Week 8 (160 mg Week 0 [Day 1], 80 mg SC Week 2, 40 mg SC Weeks 4, 6, and 8) and placebo matching to etrolizumab SC Q4W up to Week 12 (Weeks 0 [Day 1], 4, 8, and 12 [clinical remitters only]).

| <b>Serious adverse events</b>                     | Placebo        | Etrolizumab     | Adalimumab      |
|---|----------------|-----------------|-----------------|
| Total subjects affected by serious adverse events |                |                 |                 |
| subjects affected / exposed                       | 2 / 72 (2.78%) | 8 / 144 (5.56%) | 3 / 142 (2.11%) |
| number of deaths (all causes)                     | 0              | 1               | 0               |
| number of deaths resulting from adverse events    |                |                 |                 |
| Injury, poisoning and procedural complications    |                |                 |                 |
| Procedural intestinal perforation                 |                |                 |                 |

|  |                |                 |                 |
|--|----------------|-----------------|-----------------|
| subjects affected / exposed                            | 0 / 72 (0.00%) | 1 / 144 (0.69%) | 0 / 142 (0.00%) |
| occurrences causally related to treatment / all        | 0 / 0          | 0 / 1           | 0 / 0           |
| deaths causally related to treatment / all             | 0 / 0          | 0 / 0           | 0 / 0           |
| <b>Vascular disorders</b>                              |                |                 |                 |
| Deep vein thrombosis                                   |                |                 |                 |
| subjects affected / exposed                            | 0 / 72 (0.00%) | 1 / 144 (0.69%) | 0 / 142 (0.00%) |
| occurrences causally related to treatment / all        | 0 / 0          | 0 / 1           | 0 / 0           |
| deaths causally related to treatment / all             | 0 / 0          | 0 / 0           | 0 / 0           |
| <b>Cardiac disorders</b>                               |                |                 |                 |
| Cardiac arrest   |                |                 |                 |
| subjects affected / exposed                            | 0 / 72 (0.00%) | 1 / 144 (0.69%) | 0 / 142 (0.00%) |
| occurrences causally related to treatment / all        | 0 / 0          | 0 / 1           | 0 / 0           |
| deaths causally related to treatment / all             | 0 / 0          | 0 / 1           | 0 / 0           |
| <b>Blood and lymphatic system disorders</b>            |                |                 |                 |
| Anaemia  |                |                 |                 |
| subjects affected / exposed                            | 0 / 72 (0.00%) | 1 / 144 (0.69%) | 0 / 142 (0.00%) |
| occurrences causally related to treatment / all        | 0 / 0          | 0 / 1           | 0 / 0           |
| deaths causally related to treatment / all             | 0 / 0          | 0 / 0           | 0 / 0           |
| <b>Gastrointestinal disorders</b>                      |                |                 |                 |
| Colitis ulcerative                                     |                |                 |                 |
| subjects affected / exposed                            | 0 / 72 (0.00%) | 2 / 144 (1.39%) | 3 / 142 (2.11%) |
| occurrences causally related to treatment / all        | 0 / 0          | 0 / 2           | 0 / 3           |
| deaths causally related to treatment / all             | 0 / 0          | 0 / 0           | 0 / 0           |
| <b>Reproductive system and breast disorders</b>        |                |                 |                 |
| Prostatitis  |                |                 |                 |
| subjects affected / exposed                            | 1 / 72 (1.39%) | 0 / 144 (0.00%) | 0 / 142 (0.00%) |
| occurrences causally related to treatment / all        | 0 / 1          | 0 / 0           | 0 / 0           |
| deaths causally related to treatment / all             | 0 / 0          | 0 / 0           | 0 / 0           |
| <b>Hepatobiliary disorders</b>                         |                |                 |                 |
| Cholelithiasis   |                |                 |                 |
| subjects affected / exposed                            | 0 / 72 (0.00%) | 1 / 144 (0.69%) | 0 / 142 (0.00%) |
| occurrences causally related to treatment / all        | 0 / 0          | 0 / 1           | 0 / 0           |
| deaths causally related to treatment / all             | 0 / 0          | 0 / 0           | 0 / 0           |
| <b>Respiratory, thoracic and mediastinal disorders</b> |                |                 |                 |

|   |                |                 |                 |
|---|----------------|-----------------|-----------------|
| Dyspnoea  |                |                 |                 |
| subjects affected / exposed                     | 0 / 72 (0.00%) | 1 / 144 (0.69%) | 0 / 142 (0.00%) |
| occurrences causally related to treatment / all | 0 / 0          | 0 / 1           | 0 / 0           |
| deaths causally related to treatment / all      | 0 / 0          | 0 / 0           | 0 / 0           |
| Infections and infestations                     |                |                 |                 |
| Eye infection toxoplasmal                       |                |                 |                 |
| subjects affected / exposed                     | 0 / 72 (0.00%) | 1 / 144 (0.69%) | 0 / 142 (0.00%) |
| occurrences causally related to treatment / all | 0 / 0          | 1 / 1           | 0 / 0           |
| deaths causally related to treatment / all      | 0 / 0          | 0 / 0           | 0 / 0           |
| Pneumonia                                       |                |                 |                 |
| subjects affected / exposed                     | 0 / 72 (0.00%) | 1 / 144 (0.69%) | 0 / 142 (0.00%) |
| occurrences causally related to treatment / all | 0 / 0          | 0 / 1           | 0 / 0           |
| deaths causally related to treatment / all      | 0 / 0          | 0 / 0           | 0 / 0           |
| Pneumonia bacterial                             |                |                 |                 |
| subjects affected / exposed                     | 1 / 72 (1.39%) | 0 / 144 (0.00%) | 0 / 142 (0.00%) |
| occurrences causally related to treatment / all | 1 / 1          | 0 / 0           | 0 / 0           |
| deaths causally related to treatment / all      | 0 / 0          | 0 / 0           | 0 / 0           |
| Pyelonephritis acute                            |                |                 |                 |
| subjects affected / exposed                     | 1 / 72 (1.39%) | 0 / 144 (0.00%) | 0 / 142 (0.00%) |
| occurrences causally related to treatment / all | 0 / 1          | 0 / 0           | 0 / 0           |
| deaths causally related to treatment / all      | 0 / 0          | 0 / 0           | 0 / 0           |
| Metabolism and nutrition disorders              |                |                 |                 |
| Hypoalbuminaemia                                |                |                 |                 |
| subjects affected / exposed                     | 0 / 72 (0.00%) | 1 / 144 (0.69%) | 0 / 142 (0.00%) |
| occurrences causally related to treatment / all | 0 / 0          | 0 / 1           | 0 / 0           |
| deaths causally related to treatment / all      | 0 / 0          | 0 / 0           | 0 / 0           |

Frequency threshold for reporting non-serious adverse events: 5 %

| <b>Non-serious adverse events</b>                     | Placebo        | Etrolizumab     | Adalimumab        |
|---|----------------|-----------------|-------------------|
| Total subjects affected by non-serious adverse events |                |                 |                   |
| subjects affected / exposed                           | 7 / 72 (9.72%) | 6 / 144 (4.17%) | 17 / 142 (11.97%) |
| Nervous system disorders                              |                |                 |                   |
| Headache  |                |                 |                   |

|  |                     |                      |                       |
|--|---------------------|----------------------|-----------------------|
| subjects affected / exposed<br>occurrences (all)   | 3 / 72 (4.17%)<br>4 | 1 / 144 (0.69%)<br>1 | 9 / 142 (6.34%)<br>15 |
| Gastrointestinal disorders<br>Colitis ulcerative<br>subjects affected / exposed<br>occurrences (all) | 4 / 72 (5.56%)<br>4 | 5 / 144 (3.47%)<br>5 | 8 / 142 (5.63%)<br>9  |

## More information

### Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

| Date              | Amendment  |
|-------------------|--|
| 08 April 2014     | Protocol Version 2: The protocol was amended to reflect program level recommendations from the US FDA as follows:<br>-The definition of moderate to severe ulcerative colitis (UC) was updated to include stool frequency subscore of $\geq 1$ . -Ulcerative Colitis Disease Activity Assessments section was modified to include that: 1) given the potential for increased rectal bleeding following endoscopic procedures, rectal bleeding MCS will be derived prior to endoscopy; 2) post-baseline endoscopy should be performed on the same day as the study visit instead of 4 days prior to the visit; 3) each segment, instead of the worst affected segment, of the colon up to the splenic flexure (rectum, sigmoid, and descending colon) will be assigned an endoscopic subscore and the score from the worst affected segment up to the splenic flexure is to be used for the MCS calculation; 4) any discrepancy between the endoscopic subscore obtained by the local versus central readers will require a third adjudication read by a different central reader.  |
| 23 July 2014      | Protocol Version 3: The protocol was amended to simplify the study design and to facilitate early access to open-label etrolizumab to eligible patients as follows: -Administration of adalimumab/adalimumab placebo at Weeks 10 and 12 was removed for all arms (for earlier washout) to facilitate earlier entry into the Open-Label Extension (OLE Part 1) of the OLE-SM (Open-Label Extension-Safety Monitoring) study (Study GA28951). Table "Study Drug Administration Schema" was updated accordingly. - Only patients achieving clinical remission at Week 10 will progress to Weeks 12 and 14 of the study to confirm maintenance of induction. Patients not achieving clinical remission at Week 10 should remain in the blinded study until Week 12 (to enable adalimumab washout) at which time they may enroll in the OLE.  |
| 18 September 2015 | Protocol Version 4: The protocol was amended following FDA response to a type C request as follows: -Previously, the FDA had mandated a discontinuation of immunosuppressant therapy after Week 10 because of hypothetical risk of PML, resulting in distinct instructions regarding immunosuppressant use in different countries in the protocol. However, the Sponsor recently received agreement from the FDA to amend the global protocol GA28948 to instruct patients to continue their stable, baseline dose of immunosuppressants to the end of study treatment with dose reduction or discontinuation if patient experiences an immunosuppressant-related toxicity. Consequently the protocol was amended to allow patients to continue with immunosuppressant use from baseline to the end of study treatment (with dose reduction or discontinuation of immunosuppressant use permitted in the event of toxicity) in United States. -Following FDA feedback, inclusion criterion for patients at U.S. sites was amended to allow patients who had had an inadequate response to either immunosuppressants and/or corticosteroids to be eligible for the study rather than the previous requirement for failure to immunosuppressants with or without failure to corticosteroids. These two changes aligned United States with the rest of world regarding immunosuppressant use during the study and eligibility requirements for prior immunosuppressant/corticosteroid usage. Contents that indicated the use of immunosuppressants in the United States had to stop at Week 10 was removed. |

|                  |   |
|------------------|---|
| 18 December 2016 | Protocol Version 5: The protocol was amended to update and align the safety section with information regarding potential risks for etrolizumab in the current Etrolizumab Investigator's Brochure, Version 10, and to account for a change in adalimumab formulation, as follows: -The protocol was amended to include the use of the new formulation of adalimumab as needed, when supplies of the current formulation (40 mg [0.8mL]) could no longer be procured. The new formulation consisted of 40 mg (0.4 mL) of adalimumab provided in a single-use, 1-mL, glass prefilled syringe with a fixed 29-gauge ½-inch needle. The efficacy, safety, and tolerability profile of the new formulation was comparable to that of the formulation currently in use (40 mg [0.8 mL]). -The protocol was updated and added to include potential hepatic effects to be in line with the safety profile of other anti-integrins, including vedolizumab, for which hepatic adverse events were reported. Although no clear hepatic safety signals emerged to date with etrolizumab, this potential risk was considered to be applicable across the anti-integrin class and would be evaluated in all etrolizumab studies.  |
| 30 August 2017   | Protocol Version 6: The protocol was amended to enhance recruitment by reducing the complexity of the protocol, particularly at the time of screening and re-screening, as follows: -The requirement for obtaining Medical Monitor approval for extension of the screening period from 28 to 35 days was eliminated to accommodate logistic delays that might arise during the screening period and decrease site burden associated with placing approval requests. The screening window would not be extended beyond 35 days under any circumstances. -The time qualification for derivation of Mayo Clinic Score (MCS) baseline stool frequency and rectal bleeding subscores was redefined to include subscores obtained within 22 days prior to randomization (Day 1). Post-endoscopy subscores might be used, starting 2 days after the screening endoscopy, but only in cases where there were insufficient e-diary data to calculate these subscores prior to the bowel preparation day.   |
| 25 October 2018  | Protocol Version 7: The protocol was amended primarily to reflect changes in efficacy endpoints. The changes would not impact study conduct at the site level. These changes are as follows: -To assess the onset of action of etrolizumab, secondary efficacy endpoints of change in Mayo Clinic Score (MCS) rectal bleeding and stool frequency subscores from baseline to Week 6 were added. -The secondary efficacy objective to evaluate colonic mucosal alphaE integrin concentration as a biomarker was expanded and would be evaluated as an exploratory efficacy endpoint to support additional biomarker candidate evaluations in the pivotal placebo-controlled studies within the etrolizumab Phase III Program. -Derivation of the MCS endoscopic subscore at post-baseline timepoints was amended to be consistent with emerging normative standards of endoscopic assessment in clinical trials (Sandborn et al. 2017). The sigmoid colon MCS endoscopic subscore would be used (rather than the score from the worst affected segment, i.e., rectum, sigmoid colon, or descending colon) if the baseline sigmoid colon MCS endoscopic subscore was 2-3. The sigmoid colon MCS endoscopic subscore was considered to be more reliable in assessing earlier treatment response. |
| 15 March 2019    | Protocol Version 8: The protocol was amended to provide further clarification and exploratory efficacy objectives was modified as follows: -Evaluation of response at Week 10, in subgroups by baseline expression levels of colonic tissue and/or peripheral blood biomarkers, was added to predict patient subgroups with a greater likelihood of responding to etrolizumab.  |

Notes:

## Interruptions (globally)

Were there any global interruptions to the trial? No

## Limitations and caveats

None reported