



## Clinical trial results:

**A phase I, randomized, controlled, double-blind study to assess safety, reactogenicity and immunogenicity of GSK Biologicals' pneumococcal vaccine 2830930A when administered as a single dose in healthy toddlers aged 12-23 months.**

### Summary

EudraCT number	2011-002225-22
Trial protocol	DE
Global end of trial date	15 March 2012

### Results information

Result version number	v1
This version publication date	01 March 2016
First version publication date	24 May 2015

### Trial information

#### Trial identification

Sponsor protocol code	115373
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#### Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT01485406
WHO universal trial number (UTN)	-

Notes:

### Sponsors

Sponsor organisation name	GlaxoSmithKline Biologicals
Sponsor organisation address	Rue de l'Institut 89, Rixensart, Belgium,
Public contact	Clinical Disclosure Advisor, GlaxoSmithKline Biologicals, 44 2089904466, GSKClinicalSupportHD@gsk.com
Scientific contact	Clinical Disclosure Advisor, GlaxoSmithKline Biologicals, 44 2089904466, GSKClinicalSupportHD@gsk.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?	Yes

Notes:

## Results analysis stage

Analysis stage	Final
Date of interim/final analysis	04 July 2012
Is this the analysis of the primary completion data?	Yes
Primary completion date	15 March 2012
Global end of trial reached?	Yes
Global end of trial date	15 March 2012
Was the trial ended prematurely?	No

Notes:

## General information about the trial

Main objective of the trial:

- To assess safety and reactogenicity of 1 dose of 2830930A vaccine administered to toddlers aged 12-23 months primed with 3 doses of Synflorix™, in terms of occurrence of grade 3 related solicited and unsolicited adverse events and related serious adverse events.

Protection of trial subjects:

All subjects were supervised after vaccination with appropriate medical treatment readily available. Vaccines were administered by qualified and trained personnel. Only eligible subjects that had no contraindications to any components of the vaccines were vaccinated. Subjects were followed-up for 31 days after each/last vaccination

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	07 December 2011
Long term follow-up planned	No
Independent data monitoring committee (IDMC) involvement?	No

Notes:

## Population of trial subjects

### Subjects enrolled per country

Country: Number of subjects enrolled	Germany: 61
Worldwide total number of subjects	61
EEA total number of subjects	61

Notes:

### 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)	61
Children (2-11 years)	0
Adolescents (12-17 years)	0
Adults (18-64 years)	0
From 65 to 84 years	0
85 years and over	0

## Subject disposition

### Recruitment

Recruitment details:

Among the 61 enrolled and vaccinated subjects, 60 subjects completed the study.

### Pre-assignment

Screening details:

During the screening the following steps occurred: check for inclusion/exclusion criteria, contraindications/precautions, medical history of the subjects and signing informed consent forms.

### Period 1

Period 1 title	Overall trial (overall period)
Is this the baseline period?	Yes
Allocation method	Randomised - controlled
Blinding used	Double blind
Roles blinded	Subject, Investigator, Monitor, Data analyst, Carer, Assessor

Blinding implementation details:

In a double blind study, the subject, the investigator and sponsor staff who are involved in the treatment or clinical evaluation of the subjects and the review or analysis of data were all unaware of the treatment assignment. The serological data, which would lead to the unblinding of the treatment groups, were not available during the course of the study to any investigator or any person involved in the clinical conduct of the study (including data cleaning).

### Arms

Are arms mutually exclusive?	Yes
<b>Arm title</b>	12Pn-PD-DiT-CRM group

Arm description:

This group consisted in toddlers aged 12-23 months primed with 3 doses of Synflorix™ who received a single dose of GSK 12-valent pneumococcal polysaccharide and non-typeable Haemophilus influenzae protein D conjugate (GSK2830930A) vaccine at Study Month 0. Study duration was of about 1 month.

Arm type	Experimental
Investigational medicinal product name	GSK2189242A
Investigational medicinal product code	GSK2189242A
Other name	
Pharmaceutical forms	Suspension for injection in pre-filled syringe
Routes of administration	Intramuscular use

Dosage and administration details:

one dose administered intramuscularly in the deltoid of the non-dominant arm.

<b>Arm title</b>	Synflorix™ group
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Arm description:

This group consisted in toddlers aged 12-23 months primed with 3 doses of Synflorix™ who received a single dose Synflorix™ at Study Month 0. Study duration was of about 1 month.

Arm type	Active comparator
Investigational medicinal product name	Synflorix
Investigational medicinal product code	GSK1024850A
Other name	
Pharmaceutical forms	Solution for injection in pre-filled syringe
Routes of administration	Intramuscular use

Dosage and administration details:

one dose administered intramuscularly in the deltoid of the non-dominant arm.

<b>Number of subjects in period 1</b>	12Pn-PD-DiT-CRM group	Synflorix™ group
Started	31	30
Completed	31	29
Not completed	0	1
Consent withdrawn by subject	-	1

## Baseline characteristics

### Reporting groups

Reporting group title	12Pn-PD-DiT-CRM group
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Reporting group description:

This group consisted in toddlers aged 12-23 months primed with 3 doses of Synflorix™ who received a single dose of GSK 12-valent pneumococcal polysaccharide and non-typeable Haemophilus influenzae protein D conjugate (GSK2830930A) vaccine at Study Month 0. Study duration was of about 1 month.

Reporting group title	Synflorix™ group
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Reporting group description:

This group consisted in toddlers aged 12-23 months primed with 3 doses of Synflorix™ who received a single dose Synflorix™ at Study Month 0. Study duration was of about 1 month.

Reporting group values	12Pn-PD-DiT-CRM group	Synflorix™ group	Total
Number of subjects	31	30	61
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)			0
From 65-84 years			0
85 years and over			0
Age continuous Units: months			
arithmetic mean	15.5	14.4	
standard deviation	± 3.1	± 2.27	-
Gender categorical Units: Subjects			
Female	16	18	34
Male	15	12	27

## End points

### End points reporting groups

Reporting group title	12Pn-PD-DiT-CRM group
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Reporting group description:

This group consisted in toddlers aged 12-23 months primed with 3 doses of Synflorix™ who received a single dose of GSK 12-valent pneumococcal polysaccharide and non-typeable Haemophilus influenzae protein D conjugate (GSK2830930A) vaccine at Study Month 0. Study duration was of about 1 month.

Reporting group title	Synflorix™ group
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Reporting group description:

This group consisted in toddlers aged 12-23 months primed with 3 doses of Synflorix™ who received a single dose Synflorix™ at Study Month 0. Study duration was of about 1 month.

### Primary: Number of subjects reporting each solicited local symptom

End point title	Number of subjects reporting each solicited local symptom <sup>[1]</sup>
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End point description:

Assessed local symptoms were pain, redness and swelling at injection site. Any = Occurrence of the specified solicited local symptom, regardless of intensity. Grade 3 Pain = Crying when limb was moved/spontaneously painful. Grade 3 Redness/Swelling = Redness/swelling at injection site larger than (>) 30 millimeters (mm). Primary results correspond to results for occurrences of G3 local symptoms. All solicited local AEs were considered as causally related to the study vaccination.

End point type	Primary
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End point timeframe:

during the 7-day (Days 0-6) post-vaccination period

Notes:

[1] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: This endpoint contains only descriptive results. No inferential results.

End point values	12Pn-PD-DiT-CRM group	Synflorix™ group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	31	29		
Units: subject				
Any pain	14	12		
Grade 3 pain	0	0		
Any redness	20	19		
Grade 3 redness	2	0		
Any swelling	12	9		
Grade 3 swelling	3	1		

### Statistical analyses

No statistical analyses for this end point

### Primary: Number of subjects reporting each solicited general symptom

End point title	Number of subjects reporting each solicited general symptom <sup>[2]</sup>
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**End point description:**

Assessed solicited general symptoms were Drowsiness, Irritability, Loss of appetite (Loss Appet.) and Fever (rectal temperature higher than or equal to [ $\geq$ ] 38 degrees Celsius [ $^{\circ}\text{C}$ ]). Any = Occurrence of the specified solicited general symptom, regardless of intensity and relationship to vaccination. Related = Occurrence of the specified symptom assessed by the investigators as causally related to vaccination. Grade 3 (G3) Drowsiness = Drowsiness that prevented normal activity. G3 Irritability = Crying that could not be comforted/prevented normal activity. G3 Loss of appetite = Subject did not eat at all. G3 Fever = Rectal temperature higher than ( $>$ ) 40.0 $^{\circ}\text{C}$ . Primary results correspond to results for occurrences of G3 & related symptoms assessed by the investigators as related to vaccination.

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End point type	Primary
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**End point timeframe:**

during the 7-day (Days 0-6) post-vaccination period

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**Notes:**

[2] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: This endpoint contains only descriptive results. No inferential results.

End point values	12Pn-PD-DiT-CRM group	Synflorix™ group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	31	29		
Units: subject				
Any Drowsiness	9	6		
Grade 3 Drowsiness	0	0		
Related Drowsiness	8	5		
G3 & related Drowsiness	0	0		
Any Irritability	15	14		
Grade 3 Irritability	0	1		
Related Irritability	14	13		
G3 & related Irritability	0	1		
Any Loss of appetite	6	9		
Grade 3 Loss of Appetite	0	0		
Related Loss of Appetite	4	5		
G3 & related Loss of Appetite	0	0		
Any Fever	14	13		
Grade 3 Fever	1	1		
Related Fever	10	11		
G3 & related Fever	0	1		

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**Statistical analyses**

No statistical analyses for this end point

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**Primary: Number of subjects with any and Grade 3 unsolicited adverse events (AEs) with and without relationship to vaccination**

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End point title	Number of subjects with any and Grade 3 unsolicited adverse events (AEs) with and without relationship to vaccination <sup>[3]</sup>
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**End point description:**

An unsolicited AE is any untoward medical occurrence in a clinical investigation subject, temporally associated with the use of a medicinal product, whether or not considered related to the medicinal product. An AE can therefore be any unfavourable and unintended sign (including an abnormal laboratory finding), symptom, or disease (new or exacerbated) temporally associated with the use of a medicinal product. For marketed medicinal products, this also includes failure to produce expected benefits (i.e. lack of efficacy), abuse or misuse. Any = Occurrence of AE, regardless of intensity or

relationship to vaccination. Grade 3 = Occurrence of AE which prevented normal activities. Related = Occurrence of AE assessed by the investigator as causally related to vaccination. Primary results correspond to results for occurrences of Grade 3 unsolicited AE(s) assessed as related to vaccination.

End point type	Primary
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End point timeframe:

within 31 days (Day 0-Day 30) after vaccination

Notes:

[3] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: This endpoint contains only descriptive results. No inferential results.

End point values	12Pn-PD-DiT-CRM group	Synflorix™ group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	31	30		
Units: subject				
Any unsolicited AE(s)	18	15		
Grade 3 unsolicited AE(s)	0	0		
Related unsolicited AE(s)	1	1		
Grade 3 and related unsolicited AE(s)	0	0		

## Statistical analyses

No statistical analyses for this end point

## Primary: Number of subjects with any serious adverse events (SAEs) and with SAE(s) with relationship to vaccination

End point title	Number of subjects with any serious adverse events (SAEs) and with SAE(s) with relationship to vaccination <sup>[4]</sup>
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End point description:

SAEs assessed include medical occurrences that result in death, are life threatening, require hospitalization or prolongation of hospitalization, result in disability/incapacity. These should also be considered serious: invasive or malignant cancers, intensive treatment in an emergency room or at home for allergic bronchospasm, blood dyscrasias or convulsions that do not result in hospitalisation. Any = Occurrence of an SAE, regardless of relationship to vaccination. Related = Occurrence of an SAE assessed by the investigator as causally related to vaccination. Primary results correspond to results for occurrences of SAE(s) assessed as related to vaccination.

End point type	Primary
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End point timeframe:

throughout the entire study (from Month 0 up to Month 1)

Notes:

[4] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: This endpoint contains only descriptive results. No inferential results.

End point values	12Pn-PD-DiT-CRM group	Synflorix™ group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	31	30		
Units: Subject				
Any SAE(s)	0	0		
SAE(s) related to vaccination	0	0		

## Statistical analyses

No statistical analyses for this end point

### Secondary: Antibody concentrations against vaccine serotypes 1, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F and 23F

End point title	Antibody concentrations against vaccine serotypes 1, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F and 23F
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End point description:

Antibody concentrations were measured by 22F-inhibition Enzyme-Linked ImmunoSorbent Assay (ELISA), expressed as geometric mean concentrations (GMCs), in micrograms per milliliter (µg/mL). The cut-off of the assay was an antibody concentration higher than or equal to ( $\geq$ ) 0.05 µg/mL.

End point type	Secondary
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End point timeframe:

1 month post-vaccination

End point values	12Pn-PD-DiT-CRM group	Synflorix™ group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	31	27		
Units: µg/mL				
geometric mean (confidence interval 95%)				
Anti-1 (N=31;27)	2.34 (1.74 to 3.14)	2.84 (2.12 to 3.82)		
Anti-4 (N=31;27)	5.18 (4.05 to 6.63)	4.52 (3.34 to 6.1)		
Anti-5 (N=31;27)	3.31 (2.51 to 4.37)	2.29 (1.52 to 3.46)		
Anti-6A (N=31;26)	5.97 (3.91 to 9.11)	0.75 (0.43 to 1.31)		
Anti-6B (N=31;27)	5.37 (4.03 to 7.14)	1.92 (1.5 to 2.46)		
Anti-7F (N=31;27)	3.76 (2.99 to 4.73)	3.36 (2.48 to 4.55)		
Anti-9V (N=31;27)	4.38 (3.27 to 5.89)	3.61 (2.38 to 5.48)		
Anti-14 (N=31;27)	8.3 (6.27 to 10.98)	7.15 (5.51 to 9.28)		
Anti-18C (N=31;27)	11.26 (8.31 to 15.26)	11.17 (7.99 to 15.62)		
Anti-19A (N=31;27)	8.22 (5.45 to 12.4)	1.99 (1.2 to 3.29)		
Anti-19F (N=31;27)	17.34 (12.09 to 24.87)	10.89 (8.03 to 14.76)		
Anti-23F (N=31;27)	3.46 (2.63 to 4.56)	3.54 (2.65 to 4.72)		

## Statistical analyses

No statistical analyses for this end point

## Secondary: Antibody concentrations against Protein D (PD)

End point title	Antibody concentrations against Protein D (PD)
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End point description:

Anti-PD antibody concentrations were measured by Enzyme-Linked ImmunoSorbent Assay (ELISA), expressed as geometric mean concentrations (GMCs), in Elisa Units per milliliter (EL.U/mL). The cut-off of the assay was an anti-PD antibody concentration higher than or equal to ( $\geq$ ) 100 EL.U/mL.

End point type	Secondary
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End point timeframe:

1 month post-vaccination

End point values	12Pn-PD-DiT-CRM group	Synflorix™ group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	31	26		
Units: EL.U/mL				
geometric mean (confidence interval 95%)				
Anti-PD	1893.8 (1216.7 to 2947.6)	1493 (962.4 to 2316.1)		

## Statistical analyses

No statistical analyses for this end point

## Adverse events

### Adverse events information

Timeframe for reporting adverse events:

Solicited symptoms: during the 7 days after vaccination. Unsolicited AEs during 31 days after vaccination. SAEs: during the entire study period (Months 0-1).

Adverse event reporting additional description:

Solicited symptoms results are presented only for subjects for whom results were available.

Note: the occurrences (all) numbers were not calculated during the analysis: data entered are equal to the subject affected numbers.

Assessment type	Systematic
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### Dictionary used

Dictionary name	MedDRA
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Dictionary version	15.0
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### Reporting groups

Reporting group title	12Pn-PD-DiT-CRM group
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Reporting group description:

This group consisted in toddlers aged 12-23 months primed with 3 doses of Synflorix™ who received a single dose of GSK 12-valent pneumococcal polysaccharide and non-typeable Haemophilus influenzae protein D conjugate (GSK2830930A) vaccine at Study Month 0. Study duration was of about 1 month.

Reporting group title	Synflorix™ group
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Reporting group description:

This group consisted in toddlers aged 12-23 months primed with 3 doses of Synflorix™ who received a single dose Synflorix™ at Study Month 0. Study duration was of about 1 month.

Serious adverse events	12Pn-PD-DiT-CRM group	Synflorix™ group	
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 31 (0.00%)	0 / 30 (0.00%)	
number of deaths (all causes)	0	0	
number of deaths resulting from adverse events			

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

Non-serious adverse events	12Pn-PD-DiT-CRM group	Synflorix™ group	
Total subjects affected by non-serious adverse events			
subjects affected / exposed	20 / 31 (64.52%)	19 / 30 (63.33%)	
General disorders and administration site conditions			
Pain	Additional description: Symptom reported during the 7-day post-vaccination period		
subjects affected / exposed <sup>[1]</sup>	14 / 31 (45.16%)	12 / 29 (41.38%)	
occurrences (all)	14	12	
Redness	Additional description: Symptom reported during the 7-day post-vaccination		

subjects affected / exposed <sup>[2]</sup> occurrences (all)	period		
	20 / 31 (64.52%) 20	19 / 29 (65.52%) 19	
Swelling	Additional description: Symptom reported during the 7-day post-vaccination period		
subjects affected / exposed <sup>[3]</sup> occurrences (all)	12 / 31 (38.71%) 12	9 / 29 (31.03%) 9	
Drowsiness	Additional description: Symptom reported during the 7-day post-vaccination period		
subjects affected / exposed <sup>[4]</sup> occurrences (all)	9 / 31 (29.03%) 9	6 / 29 (20.69%) 6	
Irritability	Additional description: Symptom reported during the 7-day post-vaccination period		
subjects affected / exposed <sup>[5]</sup> occurrences (all)	15 / 31 (48.39%) 15	14 / 29 (48.28%) 14	
Loss of appetite	Additional description: Symptom reported during the 7-day post-vaccination period		
subjects affected / exposed <sup>[6]</sup> occurrences (all)	6 / 31 (19.35%) 6	9 / 29 (31.03%) 9	
Fever	Additional description: Symptom reported during the 7-day post-vaccination period. Fever (rectal) >38°C		
subjects affected / exposed <sup>[7]</sup> occurrences (all)	14 / 31 (45.16%) 14	13 / 29 (44.83%) 13	
Influenza like illness	Additional description: Unsolicited AE reported during the 31-day post-vaccination period.		
alternative assessment type: Non-systematic subjects affected / exposed occurrences (all)	2 / 31 (6.45%) 2	1 / 30 (3.33%) 1	
Pyrexia	Additional description: Unsolicited AE reported during the 31-day post-vaccination period.		
alternative assessment type: Non-systematic subjects affected / exposed occurrences (all)	2 / 31 (6.45%) 2	0 / 30 (0.00%) 0	
Eye disorders			
Conjunctivitis	Additional description: Unsolicited AE reported during the 31-day post-vaccination period.		
alternative assessment type: Non-systematic subjects affected / exposed occurrences (all)	2 / 31 (6.45%) 2	1 / 30 (3.33%) 1	
Gastrointestinal disorders			

Diarrhoea	Additional description: Unsolicited AE reported during the 31-day post-vaccination period.		
	alternative assessment type: Non-systematic subjects affected / exposed occurrences (all)	1 / 31 (3.23%) 1	2 / 30 (6.67%) 2
Infections and infestations			
	Additional description: Unsolicited AE reported during the 31-day post-vaccination period.		
Rhinitis	alternative assessment type: Non-systematic subjects affected / exposed occurrences (all)	4 / 31 (12.90%) 4	2 / 30 (6.67%) 2
Viral infection	Additional description: Unsolicited AE reported during the 31-day post-vaccination period.		
	alternative assessment type: Non-systematic subjects affected / exposed occurrences (all)	3 / 31 (9.68%) 3	2 / 30 (6.67%) 2
Bronchitis	Additional description: Unsolicited AE reported during the 31-day post-vaccination period.		
	alternative assessment type: Non-systematic subjects affected / exposed occurrences (all)	2 / 31 (6.45%) 2	2 / 30 (6.67%) 2
Gastroenteritis	Additional description: Unsolicited AE reported during the 31-day post-vaccination period.		
	alternative assessment type: Non-systematic subjects affected / exposed occurrences (all)	2 / 31 (6.45%) 2	1 / 30 (3.33%) 1
Otitis media	Additional description: Unsolicited AE reported during the 31-day post-vaccination period.		
	alternative assessment type: Non-systematic subjects affected / exposed occurrences (all)	2 / 31 (6.45%) 2	1 / 30 (3.33%) 1
Otitis externa	Additional description: Unsolicited AE reported during the 31-day post-vaccination period.		
	alternative assessment type: Non-systematic subjects affected / exposed occurrences (all)	0 / 31 (0.00%) 0	2 / 30 (6.67%) 2

Notes:

[1] - The number of subjects exposed to this adverse event is less than the total number of subjects exposed for the reporting group. These numbers are expected to be equal.

Justification: Solicited symptoms results are presented only for subjects for whom results were available.

[2] - The number of subjects exposed to this adverse event is less than the total number of subjects exposed for the reporting group. These numbers are expected to be equal.

Justification: Solicited symptoms results are presented only for subjects for whom results were available.

[3] - The number of subjects exposed to this adverse event is less than the total number of subjects exposed for the reporting group. These numbers are expected to be equal.

Justification: Solicited symptoms results are presented only for subjects for whom results were available.

[4] - The number of subjects exposed to this adverse event is less than the total number of subjects exposed for the reporting group. These numbers are expected to be equal.

Justification: Solicited symptoms results are presented only for subjects for whom results were available.

[5] - The number of subjects exposed to this adverse event is less than the total number of subjects exposed for the reporting group. These numbers are expected to be equal.

Justification: Solicited symptoms results are presented only for subjects for whom results were available.

[6] - The number of subjects exposed to this adverse event is less than the total number of subjects exposed for the reporting group. These numbers are expected to be equal.

Justification: Solicited symptoms results are presented only for subjects for whom results were available.

[7] - The number of subjects exposed to this adverse event is less than the total number of subjects exposed for the reporting group. These numbers are expected to be equal.

Justification: Solicited symptoms results are presented only for subjects for whom results were available.

## More information

### Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? No

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### Interruptions (globally)

Were there any global interruptions to the trial? No

### Limitations and caveats

None reported