



## Clinical trial results:

### A Randomized, Double-Blind, Vehicle-Controlled Study to Evaluate the Mechanism of Action of Ruxolitinib Cream for Vitiligo (TRuE-V MOA)

#### Summary

EudraCT number	2021-000361-32
Trial protocol	FR
Global end of trial date	10 July 2023

#### Results information

Result version number	v1 (current)
This version publication date	17 May 2024
First version publication date	17 May 2024

#### Trial information

##### Trial identification

Sponsor protocol code	INCB 18424-214
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##### Additional study identifiers

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

Notes:

#### Sponsors

Sponsor organisation name	Incyte Corporation
Sponsor organisation address	1801 Augustine Cutoff Drive, Wilmington, United States, 19803
Public contact	Study Director, Incyte Corporation, 1 8554633463, medinfo@incyte.com
Scientific contact	Study Director, Incyte Corporation, 1 8554633463, medinfo@incyte.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	10 July 2023
Is this the analysis of the primary completion data?	No

Global end of trial reached?	Yes
Global end of trial date	10 July 2023
Was the trial ended prematurely?	No

Notes:

## General information about the trial

Main objective of the trial:

The purpose of this study was to evaluate the mechanism of action (MOA) of ruxolitinib cream in vitiligo by assessing change in biomarkers.

Protection of trial subjects:

This study was to be performed in accordance with the ethical principles that have their origin in the Declaration of Helsinki and conducted in adherence to the study Protocol, applicable Good Clinical Practices, and applicable laws and country-specific regulations in which the study was being conducted

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	23 June 2021
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	Canada: 28
Country: Number of subjects enrolled	France: 5
Country: Number of subjects enrolled	United States: 27
Worldwide total number of subjects	60
EEA total number of subjects	5

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)	0
Children (2-11 years)	0
Adolescents (12-17 years)	0
Adults (18-64 years)	55
From 65 to 84 years	5

85 years and over	0
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## Subject disposition

### Recruitment

Recruitment details: -

### Pre-assignment

Screening details:

This study was conducted at a total of 11 sites in Canada, France, and the United States.

### Period 1

Period 1 title	24-Week Double-Blind Period
Is this the baseline period?	Yes
Allocation method	Randomised - controlled
Blinding used	Double blind
Roles blinded	Subject, Investigator, Monitor, Data analyst, Assessor

### Arms

Are arms mutually exclusive?	Yes
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<b>Arm title</b>	Double-Blind Period: Ruxolitinib cream 1.5% BID
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Arm description:

Participants applied ruxolitinib 1.5% cream twice daily (BID) for 24 weeks.

Arm type	Experimental
Investigational medicinal product name	ruxolitinib
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Cream
Routes of administration	Topical use

Dosage and administration details:

1.5% cream twice daily

<b>Arm title</b>	Double-Blind Period: Vehicle cream BID
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Arm description:

Participants applied matching vehicle cream BID for 24 weeks.

Arm type	Experimental
Investigational medicinal product name	Vehicle
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Cream
Routes of administration	Topical use

Dosage and administration details:

twice daily

<b>Number of subjects in period 1</b>	Double-Blind Period: Ruxolitinib cream 1.5% BID	Double-Blind Period: Vehicle cream BID
Started	41	19
Completed	37	14
Not completed	4	5
Consent withdrawn by subject	2	2

Lost to follow-up	2	3
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## Period 2

Period 2 title	28-Week Treatment-Extension Period
Is this the baseline period?	No
Allocation method	Randomised - controlled
Blinding used	Not blinded

## Arms

Are arms mutually exclusive?	Yes
<b>Arm title</b>	Treatment-Extension (TE) Period: Ruxolitinib cream 1.5% BID

### Arm description:

Participants who completed the Week 24 assessments with no safety concerns could continue into the 28-week Treatment-Extension Period. Participants who applied ruxolitinib cream 1.5% BID during the Double-Blind Period continued to apply ruxolitinib cream 1.5% BID for an additional 28 weeks in the Treatment-Extension Period.

Arm type	Experimental
Investigational medicinal product name	ruxolitinib
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Cream
Routes of administration	Topical use

### Dosage and administration details:

1.5% cream twice daily

<b>Arm title</b>	TE Period: Vehicle cream to Ruxolitinib cream 1.5% BID
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### Arm description:

Participants who completed the Week 24 assessments with no safety concerns could continue into the 28-week Treatment-Extension Period. Participants who applied vehicle cream BID during the Double-Blind Period applied ruxolitinib cream 1.5% BID for 28 weeks in the Treatment-Extension Period.

Arm type	Experimental
Investigational medicinal product name	ruxolitinib
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Cream
Routes of administration	Topical use

### Dosage and administration details:

1.5% cream twice daily

Investigational medicinal product name	Vehicle
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Cream
Routes of administration	Topical use

### Dosage and administration details:

twice daily

Number of subjects in period 2	Treatment-Extension (TE) Period: Ruxolitinib cream 1.5% BID	TE Period: Vehicle cream to Ruxolitinib cream 1.5% BID
Started	37	14
Completed	27	9
Not completed	10	5
Consent withdrawn by subject	1	1
Pregnancy	1	-
Participant Refused Safety Follow-up	3	2
Lost to follow-up	5	2

## Baseline characteristics

### Reporting groups

Reporting group title	Double-Blind Period: Ruxolitinib cream 1.5% BID
Reporting group description: Participants applied ruxolitinib 1.5% cream twice daily (BID) for 24 weeks.	
Reporting group title	Double-Blind Period: Vehicle cream BID
Reporting group description: Participants applied matching vehicle cream BID for 24 weeks.	

Reporting group values	Double-Blind Period: Ruxolitinib cream 1.5% BID	Double-Blind Period: Vehicle cream BID	Total
Number of subjects	41	19	60
Age categorical Units: Subjects			
Adults (18-64 years)	37	18	55
From 65-84 years	4	1	5
85 years and over	0	0	0
Age Continuous Units: years			
arithmetic mean	45.1	43.7	
standard deviation	± 12.73	± 13.16	-
Sex: Female, Male Units: participants			
Female	18	8	26
Male	23	11	34
Race/Ethnicity, Customized Units: Subjects			
White/Caucasian	25	13	38
Black/African-American	4	2	6
Asian	5	3	8
Native Hawaiian/Pacific Islander	1	0	1
Not Reported	5	0	5
South Asian	1	0	1
Middle Eastern	0	1	1
Ethnicity (NIH/OMB) Units: Subjects			
Hispanic or Latino	8	4	12
Not Hispanic or Latino	30	14	44
Unknown or Not Reported	3	1	4
Chemokine (C-X-C Motif) Ligand 10 (CXCL10), an immune biomarker			
Baseline was defined as the last non-missing measurement obtained on or before the first application of study drug.			
Units: nanograms per Liter (ng/L)			
arithmetic mean	600.066	415.471	
standard deviation	± 959.3097	± 177.4902	-

## End points

### End points reporting groups

Reporting group title	Double-Blind Period: Ruxolitinib cream 1.5% BID
Reporting group description:	
Participants applied ruxolitinib 1.5% cream twice daily (BID) for 24 weeks.	
Reporting group title	Double-Blind Period: Vehicle cream BID
Reporting group description:	
Participants applied matching vehicle cream BID for 24 weeks.	
Reporting group title	Treatment-Extension (TE) Period: Ruxolitinib cream 1.5% BID
Reporting group description:	
Participants who completed the Week 24 assessments with no safety concerns could continue into the 28-week Treatment-Extension Period. Participants who applied ruxolitinib cream 1.5% BID during the Double-Blind Period continued to apply ruxolitinib cream 1.5% BID for an additional 28 weeks in the Treatment-Extension Period.	
Reporting group title	TE Period: Vehicle cream to Ruxolitinib cream 1.5% BID
Reporting group description:	
Participants who completed the Week 24 assessments with no safety concerns could continue into the 28-week Treatment-Extension Period. Participants who applied vehicle cream BID during the Double-Blind Period applied ruxolitinib cream 1.5% BID for 28 weeks in the Treatment-Extension Period.	

### Primary: Percentage change from Baseline in Chemokine (C-X-C Motif) Ligand 10 (CXCL10), an immune biomarker, at Week 4, Week 12, and Week 24

End point title	Percentage change from Baseline in Chemokine (C-X-C Motif) Ligand 10 (CXCL10), an immune biomarker, at Week 4, Week 12, and Week 24 <sup>[1]</sup>
End point description:	
Baseline was defined as the last non-missing measurement obtained on or before the first application of study drug. Percentage change from Baseline was calculated as the ([post-Baseline value minus the Baseline value] / Baseline value)*100.	
End point type	Primary
End point timeframe:	
Baseline; Week 4, Week 12, and Week 24	

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: Statistical analysis was not conducted for this endpoint.

End point values	Double-Blind Period: Ruxolitinib cream 1.5% BID	Double-Blind Period: Vehicle cream BID		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	39 <sup>[2]</sup>	16 <sup>[3]</sup>		
Units: percent change				
arithmetic mean (standard deviation)				
Week 4, n=39, 16	-20.93 (± 36.216)	8.13 (± 52.491)		
Week 12, n=37, 14	-18.33 (± 40.035)	21.13 (± 70.690)		
Week 24, n=35, 14	-12.92 (± 46.146)	22.17 (± 68.893)		



Notes:

[2] - Only participants with available data were analyzed.

[3] - Only participants with available data were analyzed.

## Statistical analyses

No statistical analyses for this end point

### Secondary: Correlation of key skin inflammatory biomarkers of vitiligo in target lesions to efficacy readouts at Week 12 and Week 24

End point title	Correlation of key skin inflammatory biomarkers of vitiligo in target lesions to efficacy readouts at Week 12 and Week 24
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End point description:

Clinical scores (facial Vitiligo Area Scoring Index [F-VASI] and total body Vitiligo Area Scoring Index [T-VASI]) were evaluated for correlation with skin CXCL10 levels.

End point type	Secondary
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End point timeframe:

Baseline, Week 12, and Week 24

End point values	Double-Blind Period: Ruxolitinib cream 1.5% BID	Double-Blind Period: Vehicle cream BID		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	38 <sup>[4]</sup>	17 <sup>[5]</sup>		
Units: correlation coefficient				
number (not applicable)				
F-VASI	-0.34	0.15		
T-VASI	-0.43	0.02		

Notes:

[4] - Participants with values at each of 3 timepoints (Baseline, Week 12, and Week 24) were analyzed.

[5] - Participants with values at each of 3 timepoints (Baseline, Week 12, and Week 24) were analyzed.

## Statistical analyses

No statistical analyses for this end point

### Secondary: Number of participants with treatment-emergent adverse events (TEAEs) during the Double-Blind Period

End point title	Number of participants with treatment-emergent adverse events (TEAEs) during the Double-Blind Period
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End point description:

An adverse event (AE) was defined as any untoward medical occurrence associated with the use of a drug in humans, whether or not considered drug-related. An AE could have been any unfavorable or unintended sign (including an abnormal laboratory finding), symptom, or disease (new or exacerbated) temporally associated with the use of study drug. A TEAE was defined as any AE reported for the first time or the worsening of a pre-existing event after the first application of study drug.

End point type	Secondary
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End point timeframe:

from the time of Informed Consent Form signing until the start of the Treatment-Extension Period or 30 days after the last application of study drug during the Double-Blind Period (up to Week 24 + 30 days)

End point values	Double-Blind Period: Ruxolitinib cream 1.5% BID	Double-Blind Period: Vehicle cream BID		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	41	19		
Units: participants	19	7		

### Statistical analyses

No statistical analyses for this end point

### Secondary: Number of participants with TEAEs during the Treatment-Extension Period

End point title	Number of participants with TEAEs during the Treatment-Extension Period
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End point description:

An AE was defined as any untoward medical occurrence associated with the use of a drug in humans, whether or not considered drug-related. An AE could have been any unfavorable or unintended sign (including an abnormal laboratory finding), symptom, or disease (new or exacerbated) temporally associated with the use of study drug. A TEAE was defined as any AE reported for the first time or the worsening of a pre-existing event after the first application of study drug.

End point type	Secondary
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End point timeframe:

from the completion of the Week 24 assessments until at least 30 days after the last application of study drug at Week 52 + 30 days

End point values	Treatment-Extension (TE) Period: Ruxolitinib cream 1.5% BID	TE Period: Vehicle cream to Ruxolitinib cream 1.5% BID		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	37	14		
Units: participants	12	3		

### Statistical analyses

No statistical analyses for this end point

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**Secondary: Number of participants with a Grade 3 or higher TEAE during the Double-Blind Period**

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End point title	Number of participants with a Grade 3 or higher TEAE during the Double-Blind Period
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**End point description:**

An AE was defined as any untoward medical occurrence associated with the use of a drug in humans, whether or not considered drug-related. A TEAE was defined as any AE reported for the first time or the worsening of a pre-existing event after the first application of study drug. AE severity was assessed per the Common Terminology Criteria for Adverse Events (CTCAE), version 5.0: Grade 1: mild; asymptomatic or mild symptoms; clinical or diagnostic observations only; treatment not indicated; Grade 2: moderate; minimal, local, or noninvasive treatment indicated; limiting age-appropriate activities of daily living; Grade 3: severe or medically significant but not immediately life-threatening; hospitalization or prolongation of hospitalization indicated; disabling; limiting self-care activities of daily living; Grade 4: life-threatening consequences; urgent treatment indicated; Grade 5: fatal.

End point type	Secondary
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**End point timeframe:**

from the time of Informed Consent Form signing until the start of the Treatment-Extension Period or 30 days after the last application of study drug during the Double-Blind Period (up to Week 24 + 30 days)

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End point values	Double-Blind Period: Ruxolitinib cream 1.5% BID	Double-Blind Period: Vehicle cream BID		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	41	19		
Units: participants	1	0		

**Statistical analyses**

No statistical analyses for this end point

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**Secondary: Number of participants with a Grade 3 or higher TEAE during the Treatment-Extension Period**

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End point title	Number of participants with a Grade 3 or higher TEAE during the Treatment-Extension Period
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**End point description:**

An AE was defined as any untoward medical occurrence associated with the use of a drug in humans, whether or not considered drug-related. A TEAE was defined as any AE reported for the first time or the worsening of a pre-existing event after the first application of study drug. AE severity was assessed per the CTCAE, version 5.0: Grade 1: mild; asymptomatic or mild symptoms; clinical or diagnostic observations only; treatment not indicated; Grade 2: moderate; minimal, local, or noninvasive treatment indicated; limiting age-appropriate activities of daily living; Grade 3: severe or medically significant but not immediately life-threatening; hospitalization or prolongation of hospitalization indicated; disabling; limiting self-care activities of daily living; Grade 4: life-threatening consequences; urgent treatment indicated; Grade 5: fatal.

End point type	Secondary
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**End point timeframe:**

from the completion of the Week 24 assessments until at least 30 days after the last application of study drug at Week 52 + 30 days

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<b>End point values</b>	Treatment-Extension (TE) Period: Ruxolitinib cream 1.5% BID	TE Period: Vehicle cream to Ruxolitinib cream 1.5% BID		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	37	14		
Units: participants	0	1		

### Statistical analyses

No statistical analyses for this end point

## Adverse events

### Adverse events information

Timeframe for reporting adverse events:

from the time of Informed Consent Form signing until at least 30 days after the last application of study drug (up to Week 52 + 30 days)

Adverse event reporting additional description:

For the Double-Blind Period, TEAEs are reported for members of the Safety Population: all participants who applied ruxolitinib cream or vehicle cream at least once. For the Treatment-Extension (TE) Period, TEAEs are reported for the TE Evaluable Population: all participants who applied ruxolitinib cream at least once in the TE Period.

Assessment type	Systematic
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### Dictionary used

Dictionary name	MedDRA
Dictionary version	22

### Reporting groups

Reporting group title	Ruxolitinib cream 1.5% BID
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Reporting group description:

Participants applied ruxolitinib cream during the Double-Blind Treatment Period and the Treatment-Extension Period. Participants applied ruxolitinib 1.5% cream BID for 24 weeks. Participants who completed the Week 24 assessments with no safety concerns could continue into the 28-week Treatment-Extension Period. Participants who applied ruxolitinib cream 1.5% BID during the Double-Blind Period continued to apply ruxolitinib cream 1.5% BID for an additional 28 weeks in the Treatment-Extension Period. Participants who applied vehicle cream BID during the Double-Blind Period applied ruxolitinib cream 1.5% BID for 28 weeks in the Treatment-Extension Period.

Reporting group title	Vehicle cream BID
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Reporting group description:

Participants applied matching vehicle cream twice a day (BID) for 24 weeks in the Double-Blind Period.

Serious adverse events	Ruxolitinib cream 1.5% BID	Vehicle cream BID	
Total subjects affected by serious adverse events			
subjects affected / exposed	1 / 55 (1.82%)	0 / 19 (0.00%)	
number of deaths (all causes)	0	0	
number of deaths resulting from adverse events	0	0	
Cardiac disorders			
Acute coronary syndrome			
subjects affected / exposed	1 / 55 (1.82%)	0 / 19 (0.00%)	
occurrences causally related to treatment / all	0 / 1	0 / 0	
deaths causally related to treatment / all	0 / 0	0 / 0	

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

<b>Non-serious adverse events</b>	Ruxolitinib cream 1.5% BID	Vehicle cream BID	
Total subjects affected by non-serious adverse events			
subjects affected / exposed	10 / 55 (18.18%)	7 / 19 (36.84%)	
Neoplasms benign, malignant and unspecified (incl cysts and polyps)			
Seborrhoeic keratosis			
subjects affected / exposed	0 / 55 (0.00%)	1 / 19 (5.26%)	
occurrences (all)	0	1	
Congenital, familial and genetic disorders			
Hydrocele			
subjects affected / exposed	0 / 55 (0.00%)	1 / 19 (5.26%)	
occurrences (all)	0	1	
General disorders and administration site conditions			
Application site exfoliation			
subjects affected / exposed	1 / 55 (1.82%)	1 / 19 (5.26%)	
occurrences (all)	1	1	
Skin and subcutaneous tissue disorders			
Dermatitis contact			
subjects affected / exposed	0 / 55 (0.00%)	1 / 19 (5.26%)	
occurrences (all)	0	1	
Infections and infestations			
COVID-19			
subjects affected / exposed	9 / 55 (16.36%)	2 / 19 (10.53%)	
occurrences (all)	9	2	
Urinary tract infection			
subjects affected / exposed	0 / 55 (0.00%)	1 / 19 (5.26%)	
occurrences (all)	0	1	
Gastroenteritis			
subjects affected / exposed	0 / 55 (0.00%)	1 / 19 (5.26%)	
occurrences (all)	0	1	

## 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