

## Supporting Information

**Supplement to article titled:** Tralokinumab provides clinically meaningful responses at Week 16 in adults with moderate-to-severe atopic dermatitis who do not achieve IGA 0/1.

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## Declarations

### I. Funding

The ECZTRA 1 and 2 clinical trials were sponsored by LEO Pharma A/S (Ballerup, Denmark).

### II. Conflicts of interest/Competing interests

**Eric L Simpson** reports personal fees from AbbVie, Amgen, Arena Pharmaceuticals, Aslan Pharma, Benevolent AI Bio Limited “BAI”, BiomX Ltd, Bluefin Biomedicine Inc, Boehringer-Ingelheim, Boston Consulting Group, Collective Acumen, LLC (CA), Coronado, Dermira, Eli Lilly, Evidera, ExcerptaMedica, Galderma, GlaxoSmithKline, Forte Bio RX, Incyte Dermatologics, Janssen, Kyowa Kirin Pharmaceutical Development, Leo Pharm, Medscape LLC, Merck, Novartis, Ortho Galderma, Pfizer, Physicians World LLC, Pierre Fabre Dermo Cosmetique, Regeneron, Roivant, Sanofi- Genzyme, SPARC India, Trevi therapeutics, WebMD and Valeant; reports grants (or served as Principal Investigator role) from AbbVie, Amgen, Arcutis, Aslan, Castle Biosciences, Inc Celegene, CorEvitas, Dermavant, Dermira, Eli Lilly, Galderma, Incyte, Kymab, Kyowa Hakko Kirin, Leo Pharmaceuticals, Merck, Novartis, Pfizer, Regeneron, Sanofi, and TARGET-DERM. **Andrew Blauvelt** has served as a speaker (received honoraria) for AbbVie, Bristol-Myers Squibb, Eli Lilly and Company, Pfizer, Regeneron, and

Sanofi, served as a scientific adviser (received honoraria) for AbbVie, Abcentra, Aclaris, Affibody, Aligos, Almirall, Alumis, Amgen, Anaptysbio, Arcutis, Arena, Aslan, Athenex, Bluefin Biomedicine, Boehringer Ingelheim, Bristol-Myers Squibb, Cara Therapeutics, Dermavant, EcoR1, Eli Lilly and Company, Escient, Evelo, Evommune, Forte, Galderma, HighlightII Pharma, Incyte, InnoventBio, Janssen, Landos, LEO Pharma, Merck, Novartis, Pfizer, Rani, Rapt, Regeneron, Sanofi Genzyme, Spherix Global Insights, Sun Pharma, TLL Pharmaceutical, TrialSpark, UCB Pharma, Union, Vibliome, and Xencor, and has acted as a clinical study investigator (institution has received clinical study funds) for AbbVie, Acelyrin, Allakos, Almirall, Alumis, Amgen, Arcutis, Athenex, Boehringer Ingelheim, Bristol-Myers Squibb, Concert, Dermavant, Eli Lilly and Company, Evelo, Evommune, Galderma, Incyte, Janssen, LEO Pharma, Merck, Novartis, Pfizer, Regeneron, Sun Pharma, UCB Pharma, and Ventyx.

**Jonathan I Silverberg** reports honoraria as a consultant/advisory board member from LEO Pharma and has acted as a consultant for and/or received grants/honoraria from AbbVie, AnaptysBio, Asana Biosciences, Galderma Research and Development, GSK, Glenmark, Kiniksa, LEO Pharma, Lilly, MedImmune, Menlo Therapeutics, Pfizer, PuriCore, Regeneron, and Sanofi. **Michael J Cork** has served as a clinical trial investigator for Astellas, Galapagos, Johnson & Johnson, LEO Pharma, La Roche-Posay, MSD, Novartis, Perrigo, Regeneron, Sanofi Genzyme, and Stiefel; has served as an advisory board member, consultant, and/or invited lecturer for Pfizer Inc., Amgen, Astellas, Bayer, Johnson & Johnson, LEO Pharma, L'Oréal, MSD, Novartis, Regeneron, Sanofi Genzyme, Stiefel, and Unilever; has received honoraria from Astellas, Johnson & Johnson, LEO Pharma, Novartis, Regeneron, Sanofi Genzyme, and Stiefel; and has received research funding from Bayer. **Norito Katoh** has received honoraria as a speaker/consultant for Sanofi, Maruho, Abbvie, Ely-Lilly Japan, Taiho Pharmaceutical, Torii Pharmaceutical, and LEO Pharma, and has received grants as an investigator from Maruho, Ely-Lilly Japan, Sun Pharma, Taiho Pharmaceutical, Torii Pharmaceutical, Boehringer Ingelheim Japan, Kyowa Kirin, Jansen Pharma, Boehringer Ingelheim Japan, Abbvie, and LEO Pharma. **Thomas Mark** was an employee and stockholder of LEO Pharma A/S when conducting the data analyses for this publication. **Shannon KR Schneider** is an employee of LEO Pharma Inc. **Andreas Wollenberg** has received grants, personal fees, or nonfinancial support from AbbVie, Almirall, Aileens, Beiersdorf, Bioderma, BMS, Chugai, Galapagos, Galderma, GSK, Hans Karrer, Janssen, LEO Pharma, Lilly, L'Oreal, Maruho, MedImmune, Novartis, Pfizer, Pierre Fabre, Regeneron, Santen, and Sanofi-Aventis.

### III. Availability of data and material

Data will be made available, upon request to the study sponsor, following review by the external Patient and Scientific Review Board.

### IV. Ethic approval

The ECZTRA 1 and 2 trials were sponsored by LEO Pharma A/S (Ballerup, Denmark) and conducted in accordance with the ethical principles derived from international guidelines including the Declaration of Helsinki and Council for International Organizations of Medical Sciences International Ethical Guidelines and in compliance with International Council for Harmonisation guidelines for Good Clinical Practice. The clinical trial was approved by institutional review boards or ethics committees at each study site. This trial followed the Consolidated Standards of Reporting Trials reporting guideline.

### V. Consent to participate

All patients provided written informed consent.

### VI. Consent for publication

N/A

**VII. Code availability**

N/A

**VIII. Author contributions**

Conceptualization: All authors contributed equally; Investigation: All authors contributed equally; Data curation: Thomas Mark (lead); Formal analysis: Thomas Mark (lead); Methodology: Thomas Mark (equal), Shannon KR Schneider (equal); Writing: All authors contributed equally; Review/Editing: All authors contributed equally. All authors read and approved the final version of the manuscript.

**The authors have provided this Supporting Information to provide readers additional information about their work.**

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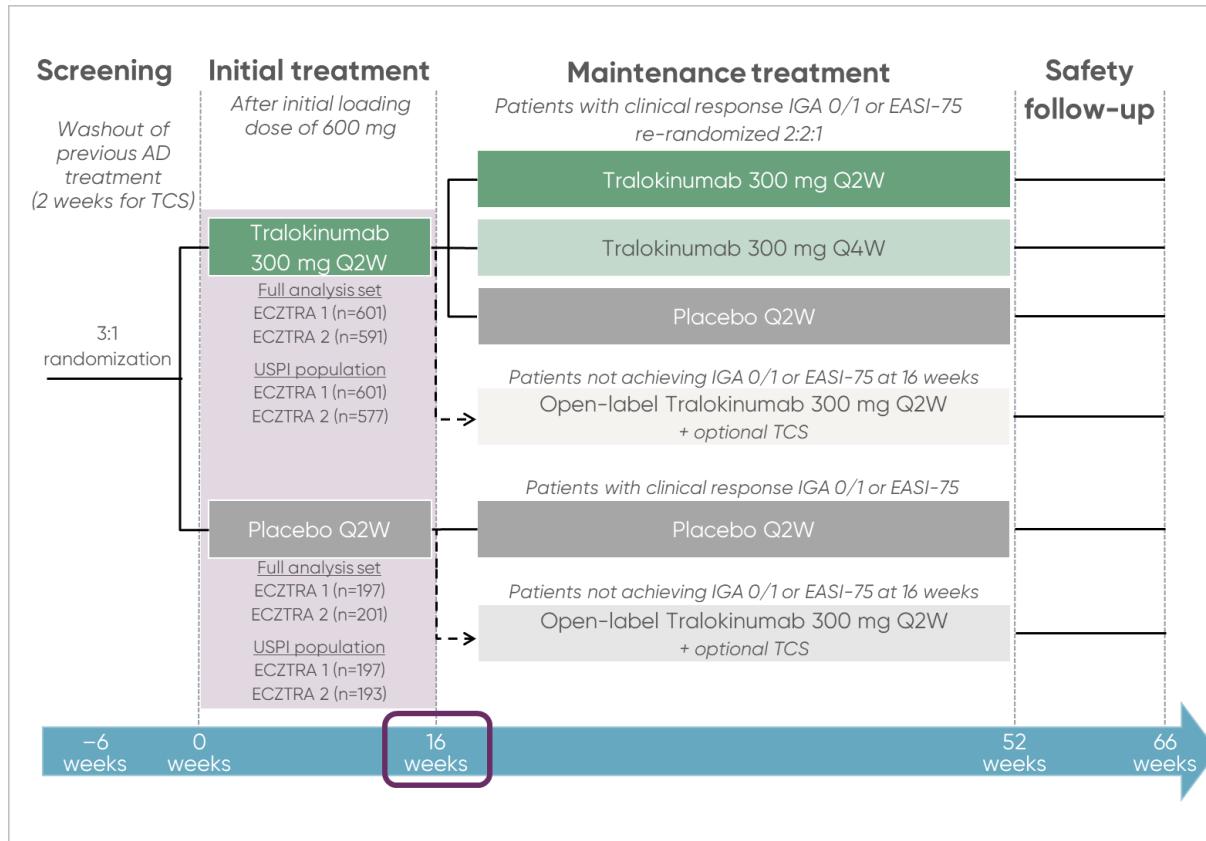
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**Fig. S1** ECZTRA 1 and 2 trial design. AD: atopic dermatitis. EASI: Eczema Area Severity Index. EASI-75: at least 75% improvement in EASI. IGA: Investigator's Global Assessment. Q2W: once every 2 weeks. Q4W: once every 4 weeks. TCS: topical corticosteroids.

**Table S1** Baseline characteristics for ECZTRA 1 and 2 non-responders at Week 16 split by achievement of at least one clinically meaningful response

Not Achieving at least one clinically meaningful response <sup>a</sup> at Week 16				At least one clinically meaningful response <sup>a</sup> at Week 16				
	NRI dataset		AO dataset		NRI dataset		AO dataset	
	Tralo (N=495)	PBO (N=259)	Tralo (N=160)	PBO (N=115)	Tralo (N=471)	PBO (N=103)	Tralo (N=741)	PBO (N=213)
Mean age, y (SD)	38.6 (14.2)	36.0 (14.2)	37.7 (15.1)	34.0 (12.9)	37.4 (14.4)	40.9 (16.2)	38.2 (14.1)	39.0 (14.9)
Male, n (%)	306 (61.8)	159 (61.4)	112 (70.0)	66 (57.4)	281 (59.7)	55 (53.4)	443 (59.8)	127 (59.6)
Race, n (%)								
White	312 (63.2)	166 (64.6)	107 (66.9)	71 (61.7)	317 (67.3)	74 (72.5)	483 (65.3)	150 (71.4)
Black or African American	30 (6.1)	16 (6.2)	8 (5.0)	8 (7.0)	35 (7.4)	6 (5.9)	44 (5.9)	8 (3.8)
Asian	136 (27.5)	68 (26.5)	42 (26.3)	33 (28.7)	102 (21.7)	20 (19.6)	187 (25.3)	48 (22.9)
American Indian or Alaska Native	1 (0.2)	0 (0.0)	1 (0.6)	0 (0.0)	2 (0.4)	0 (0.0)	2 (0.3)	0 (0.0)
Native Hawaiian or other Pacific Islander	4 (0.8)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.2)	0 (0.0)	2 (0.3)	0 (0.0)
Other	11 (2.2)	7 (2.7)	2 (1.3)	3 (2.6)	14 (3.0)	2 (2.0)	22 (3.0)	4 (1.9)
Missing data	1	2	0	0	0	1	1	3
Mean duration of AD, y (SD)	28.5 (15.6)	28.7 (14.1)	24.5 (13.6)	27.6 (13.9)	27.7 (14.8)	30.0 (16.9)	28.9 (15.5)	30.2 (15.0)
Mean BSA involvement with AD, % (SD)	58.2 (25.3)	57.2 (25.5)	52.5 (25.0)	52.5 (22.8)	52.4 (23.8)	51.0 (23.7)	56.2 (24.5)	57.6 (25.7)
IGA, n (%)								
IGA 3 (moderate)	204 (41.2)	115 (44.4)	81 (50.6)	62 (53.9)	240 (51.0)	53 (51.5)	327 (44.1)	88 (41.3)
IGA 4 (severe)	291 (58.8)	144 (55.6)	79 (49.4)	53 (46.1)	231 (49.0)	50 (48.5)	414 (55.9)	125 (58.7)
Mean EASI (SD)	34.6 (14.6)	34.3 (14.1)	32.0 (14.0)	32.2 (12.3)	32.6 (14.1)	31.8 (13.3)	34.1 (14.4)	34.5 (14.5)
Mean weekly average worst daily pruritus NRS (SD)	8.0 (1.4), n=489	8.0 (1.3), n=257	7.8 (1.3), n=159	7.7 (1.4)	7.7 (1.5), n=469	7.7 (1.3)	7.9 (1.5), n=737	8.0 (1.3), n=211
Mean DLQI (SD)	17.8 (7.3), n=488	17.9 (7.0), n=256	15.6 (7.6), n=158	16.1 (6.9)	17.5 (6.9), n=468	17.7 (6.3)	18.0 (6.9), n=735	18.7 (6.5), n=211

<sup>a</sup>EASI-50, ≥3-point improvement in itch NRS, or ≥4-point improvement in DLQI.

AO: as observed. AD: atopic dermatitis. BSA: body surface area. DLQI: Dermatology Life Quality Index. EASI: Eczema Area and Severity Index. EASI-50: at least 50% improvement in EASI. IGA: Investigator's Global Assessment. NRI: non-responder imputation. NRS: numeric rating scale. n: number of subjects in analysis set. PBO: placebo. Q2W: every 2 weeks. SD: standard deviation. Tralo: tralokinumab.

**Table S2** Week 16 outcomes for ECZTRA 1 and 2 non-responders at Week 16

	NRI dataset		AO dataset <sup>a</sup>	
	Tralo (N=966)	PBO (N=362)	Tralo (N=901)	PBO (N=328)
<b>EASI, n</b>	966	362	899	328
Mean (SD)	24.4 (16.7)	29.9 (15.7)	17.7 (13.7)	23.6 (14.8)
Absolute change from baseline, Mean (SD)	-9.2 (12.5)	-3.7 (10.2)	-16.1 (13.4)	-10.1 (14.5)
<b>weekly average worst daily pruritus NRS, n</b>	958	360	827	301
Mean (SD)	6.5 (2.4)	7.3 (2.1)	5.4 (2.4)	6.1 (2.3)
Absolute change from baseline, Mean (SD)	-1.4 (2.1)	-0.6 (1.6)	-2.5 (2.2)	-1.8 (2.2)
<b>eczema-related sleep interference (sleep) NRS, n</b>	958	360	827	301
Mean (SD)	5.7 (2.8)	6.5 (2.5)	4.4 (2.7)	5.2 (2.7)
Absolute change from baseline, Mean (SD)	-1.4 (2.2)	-0.6 (1.7)	-2.6 (2.5)	-1.9 (2.5)
<b>SCORAD, n</b>	966	362	899	327
Mean (SD)	57.6 (20.4)	65.9 (17.3)	47.8 (18.7)	56.2(18.4)
Absolute change from baseline, Mean (SD)	-13.7 (17.1)	-6.1 (13.8)	-23.6 (17.3)	-15.8 (19.1)
<b>DLQI, n</b>	961	359	873	319
Mean (SD)	13.1 (8.5)	15.6 (8.1)	9.5 (7.2)	11.8 (7.8)
Absolute change from baseline, Mean (SD)	-4.5 (6.7), n=958	-2.2 (5.3), n=360	-8.1 (7.3), n=866	-6.0 (7.5), n=318

<sup>a</sup>Fewer patients compared to NRI dataset since patients with missing observations were omitted.

AO: as observed. DLQI: Dermatology Life Quality Index. EASI: Eczema Area and Severity Index. NRI: non-responder imputation. NRS: numeric rating scale. n: number of subjects in analysis set. PBO: placebo. SD: standard deviation. SCORAD: SCORing Atopic Dermatitis. Tralo: tralokinumab.

**Results from analyses based on the United States Prescribing Information (USPI)\* are provided here:**

\*Two sites in the ECZTRA 2 trial were closed due to GCP non-compliance issues. The US Food and Drug Administration (FDA) review team decided to exclude the data from these sites (22 patients) from the efficacy and safety analysis in the USPI.

**Table S3** Baseline characteristics for ECZTRA 1 and 2 responders (IGA 0/1 without rescue medication) versus non-responders at Week 16 (USPI population)

	IGA >1 <sup>a</sup> at Week 16				IGA 0/1 <sup>b</sup> at Week 16	
	NRI dataset		AO dataset <sup>c</sup>		NRI and AO datasets <sup>d</sup>	
	Tralo (N=960)	PBO (N=358)	Tralo (N=898)	PBO (N=327)	Tralo (N=218)	PBO (N=32)
Mean age, y (SD)	38.0 (14.3)	37.3 (14.9)	38.1 (14.3)	37.2 (14.4)	37.3 (14.1)	34.7 (13.6)
Male, n (%)	584 (60.8)	211 (58.9)	553 (61.6)	193 (59.0)	113 (51.8)	19 (59.4)
Race, n (%)						
White	628 (65.5)	240 (67.6)	589 (65.7)	221 (68.2)	166 (76.5)	20 (62.5)
African American	60 (6.3)	18 (5.1)	50 (5.6)	15 (4.6)	12 (5.5)	8 (25.0)
Asian	238 (24.8)	88 (24.8)	229 (25.5)	81 (25.0)	36 (16.6)	4 (12.5)
American Indian or Alaska Native	3 (0.3)	0 (0.0)	3 (0.3)	0 (0.0)	0 (0.0)	0 (0.0)
Native Hawaiian or other Pacific Islander	5 (0.5)	0 (0.0)	2 (0.2)	0 (0.0)	1 (0.5)	0 (0.0)
Other	25 (2.6)	9 (2.5)	24 (2.7)	7 (2.2)	2 (0.9)	0 (0.0)
Missing data	1	3	1	3	1	0
Mean duration of AD, y (SD)	28.0 (15.2)	29.1 (15.0)	28.1 (15.2)	29.3 (14.6)	27.7 (15.2)	22.0 (14.4)
Mean BSA involvement with AD, % (SD)	55.5 (24.7)	55.8 (25.0)	55.6 (24.6)	55.9 (24.8)	41.4 (21.4)	37.9 (19.3)
IGA, n (%)						
IGA 3 (moderate)	440 (45.8)	165 (46.1)	406 (45.2)	150 (45.9)	152 (69.7)	23 (71.9)
IGA 4 (severe)	520 (54.2)	193 (53.9)	492 (54.8)	177 (54.1)	66 (30.3)	9 (28.1)
Mean EASI (SD)	33.7 (14.4)	33.7 (13.9)	33.8 (14.4)	33.7 (13.8)	26.2 (10.2)	24.6 (9.7)
Mean weekly average worst daily pruritus NRS (SD)	7.9 (1.4), n=952	7.9 (1.3), n=356	7.9 (1.4), n=893	7.9 (1.3), n=325	7.5 (1.5), n=217	7.0 (1.6), n=31
Mean SCORAD (SD)	71.3 (13.1)	71.9 (12.3)	71.4 (13.1)	71.9 (12.1)	65.5 (12.7)	62.2 (11.2)
Mean DLQI (SD)	17.7 (7.1), n=950	17.9 (6.7), n=355	17.6 (7.1), n=890	17.8 (6.7), n=325	15.7 (6.9), n=214	13.4 (8.2), n=31
Mean eczema-related sleep interference (sleep) NRS (SD)	7.1 (2.0), n=952	7.1 (2.0), n=356	7.1 (2.1), n=893	7.1 (2.0), n=325	6.8 (2.0), n=217	5.9 (2.3), n=31

<sup>a</sup>Patients who did not achieve IGA 0/1 at Week 16 and/or used rescue medication.<sup>b</sup>Without rescue medication.<sup>c</sup>Fewer patients compared to NRI dataset since patients with missing observations were omitted.<sup>d</sup>For the responder population, the AO and NRI datasets are identical.

AO: as observed. AD: atopic dermatitis. BSA: body surface area. DLQI: Dermatology Life Quality Index. EASI: Eczema Area and Severity Index. IGA: Investigator's Global Assessment. NRI: non-responder imputation. NRS: numeric rating scale. n: number of subjects in analysis set. PBO: placebo. Q2W: every 2 weeks. SCORAD: SCORing Atopic Dermatitis. SD: standard deviation. Tralo: tralokinumab. USPI: United States Prescribing Information.

**Table S4** Baseline characteristics for ECZTRA 1 and 2 non-responders at Week 16 split by achievement of at least one clinically meaningful response (USPI population)

Not Achieving at least one clinically meaningful response <sup>a</sup> at Week 16				At least one clinically meaningful response <sup>a</sup> at Week 16				
	NRI dataset		AO dataset		NRI dataset		AO dataset	
	Tralo (N=492)	PBO (N=255)	Tralo (N=160)	PBO (N=114)	Tralo (N=468)	PBO (N=103)	Tralo (N=738)	PBO (N=213)
Mean age, y (SD)	38.6 (14.2)	35.9 (14.1)	37.7 (15.1)	33.8 (12.8)	37.3 (14.3)	40.9 (16.2)	38.2 (14.1)	39.0 (14.9)
Male, n (%)	305 (62.0)	156 (61.2)	112 (70.0)	66 (57.9)	279 (59.6)	55 (53.4)	441 (59.8)	127 (59.6)
Race, n (%)								
White	312 (63.5)	166 (65.6)	107 (66.9)	71 (62.3)	316 (67.5)	74 (72.5)	482 (65.4)	150 (71.4)
Black or African American	27 (5.5)	12 (4.7)	8 (5.0)	7 (6.1)	33 (7.1)	6 (5.9%)	42 (5.7)	8 (3.8)
Asian	136 (27.7)	68 (26.9)	42 (26.3)	33 (28.9)	102 (21.8)	20 (19.6%)	187 (25.4)	48 (22.9)
American Indian or Alaska Native	1 (0.2)	0 (0.0)	1 (0.6)	0 (0.0)	2 (0.4)	0 (0.0)	2 (0.3)	0 (0.0)
Native Hawaiian or other Pacific Islander	4 (0.8)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.2)	0 (0.0)	2 (0.3)	0 (0.0)
Other	11 (2.2)	7 (2.8)	2 (1.3)	3 (2.6)	14 (3.0)	2 (2.0)	22 (3.0)	4 (1.9)
Missing data	1	2	0	0	0	1	1	3
Mean duration of AD, y (SD)	28.4 (15.6)	28.8 (14.1)	24.5 (13.6)	27.8 (13.9)	27.7 (14.8)	30.0 (16.9)	28.9 (15.4)	30.2 (15.0)
Mean BSA involvement with AD, % (SD)	58.4 (25.2)	57.8 (25.3)	52.5 (25.0)	52.8 (22.7)	52.5 (23.8)	51.0 (23.7)	56.3 (24.5)	57.6 (25.7)
IGA, n (%)								
IGA 3 (moderate)	202 (41.1)	112 (43.9)	81 (50.6)	62 (54.4)	238 (50.9)	53 (51.5)	325 (44.0)	88 (41.3)
IGA 4 (severe)	290 (58.9)	143 (56.1)	79 (49.4)	52 (45.6)	230 (49.1)	50 (48.5)	413 (56.0)	125 (58.7)
Mean EASI (SD)	34.7 (14.6)	34.5 (14.1)	32.0 (14.0)	32.2 (12.4)	32.6 (14.1)	31.8 (13.3)	34.2 (14.5)	34.5 (14.5)
Mean weekly average worst daily pruritus NRS (SD)	8.0 (1.4), n=486	8.0 (1.3), n=253	7.8 (1.3), n=159	7.7 (1.4)	7.7 (1.5), n=466	7.7 (1.3)	7.9 (1.5), n=734	8.0 (1.3), n=211
Mean DLQI (SD)	17.8 (7.3), n=485	18.0 (6.9), n=252	15.6 (7.6), n=158	16.2 (6.9)	17.6 (6.8), n=465	17.7 (6.3)	18.0 (6.9), n=732	18.7 (6.5), n=211

<sup>a</sup>EASI-50, ≥3-point improvement in itch NRS, or ≥4-point improvement in DLQI.

AO: as observed. AD: atopic dermatitis. BSA: body surface area. DLQI: Dermatology Life Quality Index. EASI: Eczema Area and Severity Index. EASI-50: at least 50% improvement in EASI. IGA: Investigator's Global Assessment. NRI: non-responder imputation. NRS: numeric rating scale. n: number of subjects in analysis set. PBO: placebo. Q2W: every 2 weeks. SD: standard deviation. Tralo: tralokinumab. USPI: United States Prescribing Information.

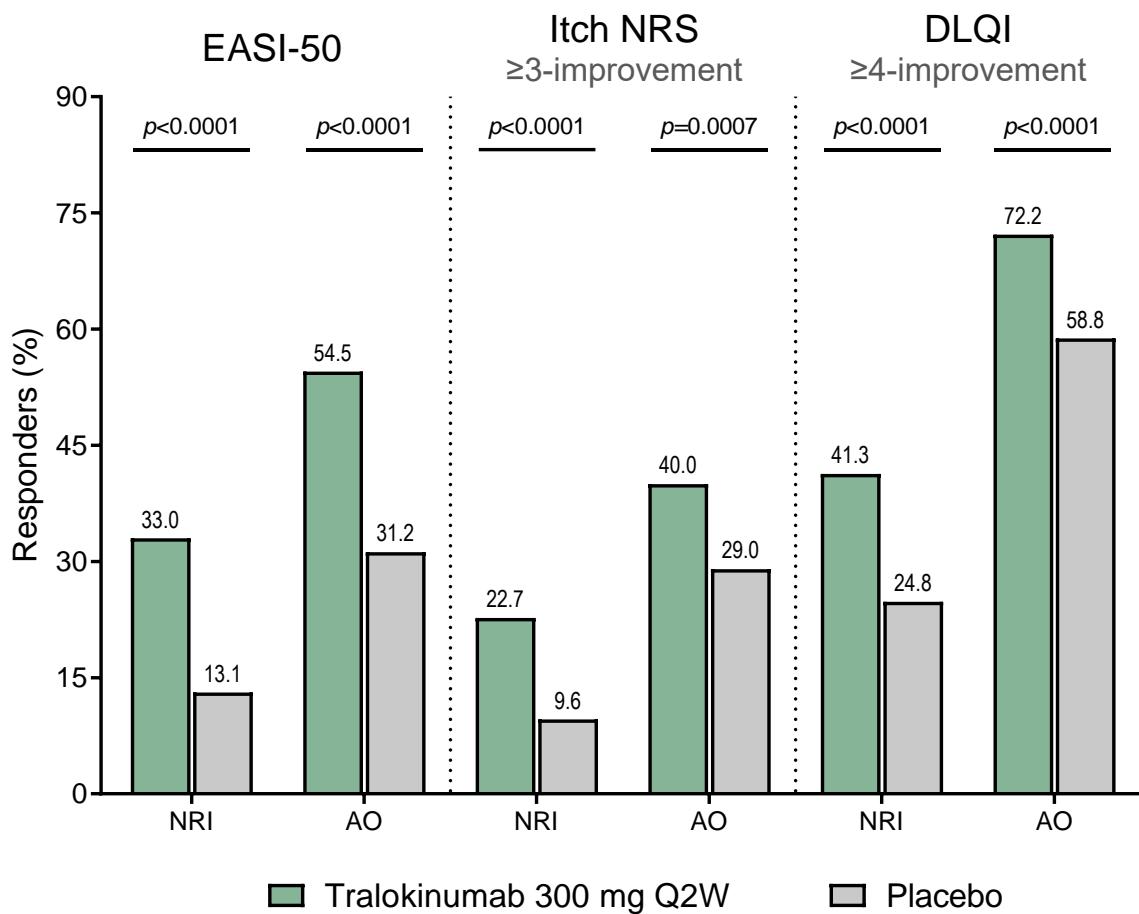
**Table S5** Week 16 outcomes for ECZTRA 1 and 2 non-responders at Week 16 (USPI population)

	NRI dataset		AO dataset <sup>a</sup>	
	Tralo (N=960)	PBO (N=358)	Tralo (N=898)	PBO (N=327)
<b>EASI</b>	960	358	896	327
Mean (SD)	24.5 (16.7)	30.0 (15.7)	17.7 (13.8)	23.6 (14.8)
Absolute change from baseline, Mean (SD)	-9.2 (12.6)	-3.7 (10.3)	-16.1 (13.5)	-10.1 (14.5)
<b>weekly average worst daily pruritus NRS, n</b>	952	356	824	300
Mean (SD)	6.5 (2.4)	7.3 (2.1)	5.4 (2.4)	6.1 (2.3)
Absolute change from baseline, Mean (SD)	-1.4 (2.1)	-0.6 (1.6)	-2.5 (2.2)	-1.8 (2.2)
<b>eczema-related sleep interference (sleep) NRS, n</b>	952	356	824	300
Mean (SD)	5.7 (2.8)	6.5 (2.5)	4.4 (2.7)	5.2 (2.7)
Absolute change from baseline, Mean (SD)	-1.4 (2.2)	-0.6 (1.7)	-2.6 (2.5)	-1.9 (2.5)
<b>SCORAD, n</b>	960	358	896	326
Mean (SD)	57.6 (20.4)	65.8 (17.4)	47.9 (18.8)	56.1 (18.5)
Absolute change from baseline, Mean (SD)	-13.7 (17.1)	-6.1 (13.9)	-23.5 (17.3)	-15.8 (19.1)
<b>DLQI, n</b>	955	355	870	318
Mean (SD)	13.1 (8.4)	15.7 (8.1)	9.5 (7.3)	11.8 (7.8)
Absolute change from baseline, Mean (SD)	-4.5 (6.7), n=952	-2.2 (5.3), n=356	-8.1 (7.3), n=863	-6.0 (7.5), n=317

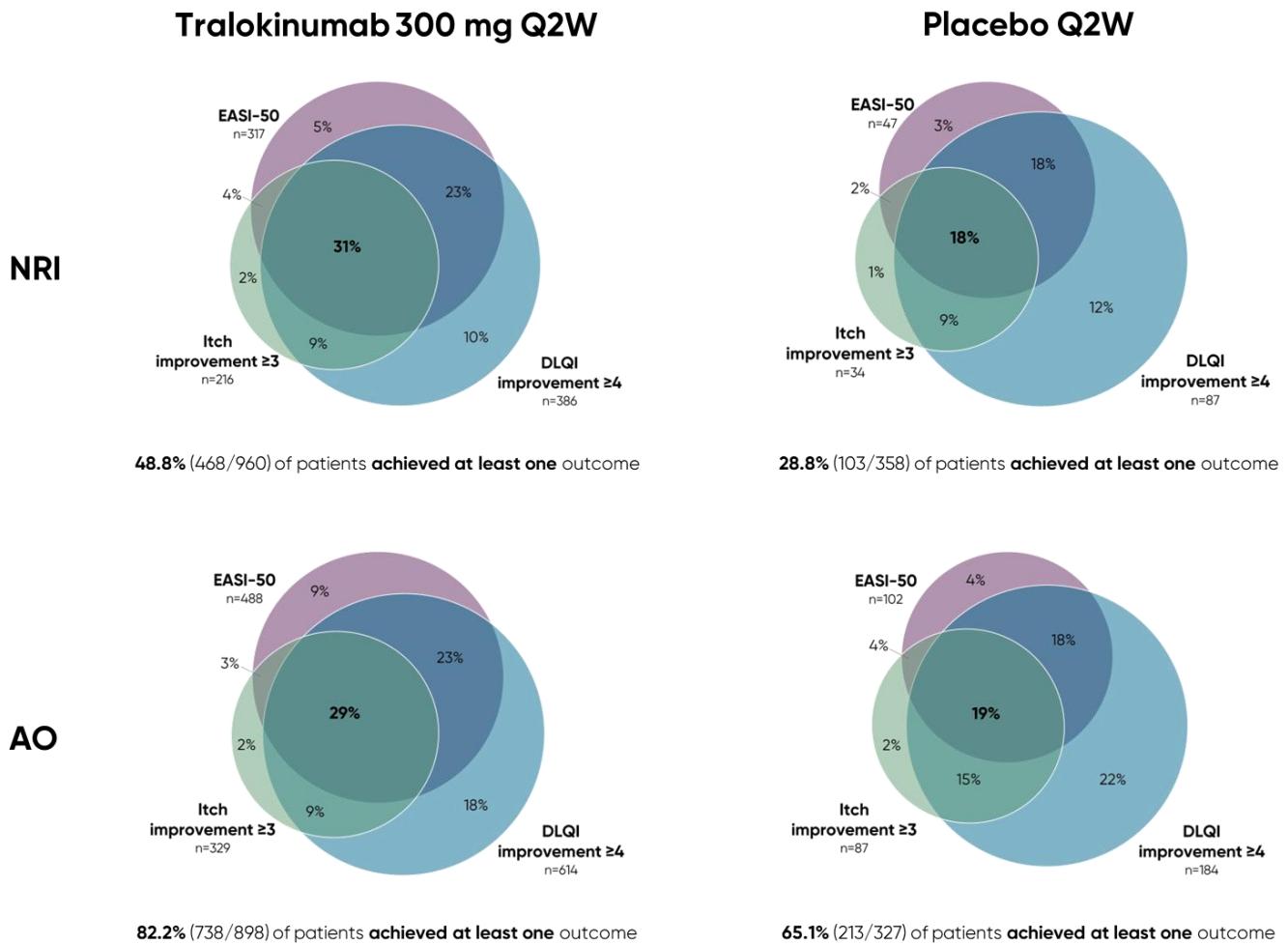
<sup>a</sup>Fewer patients compared to NRI dataset since patients with missing observations were omitted.

AO: as observed. DLQI: Dermatology Life Quality Index. EASI: Eczema Area and Severity Index. NRI: non-responder imputation.

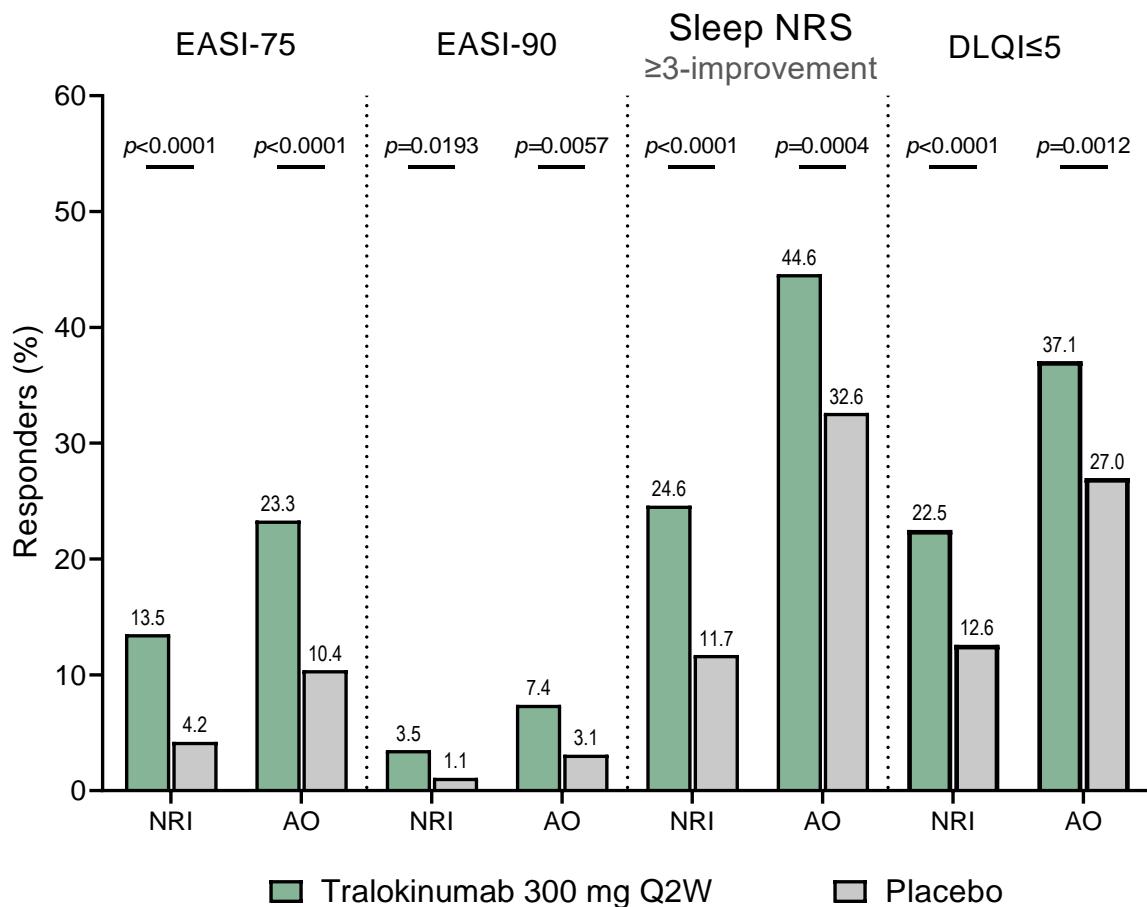
NRS: numeric rating scale. n: number of subjects in analysis set. PBO: placebo. SD: standard deviation. SCORAD: SCORing Atopic Dermatitis. Tralo: tralokinumab. USPI: United States Prescribing Information



**Fig. S2** Greater proportion of tralokinumab-treated patients achieved clinically meaningful responses relative to placebo at Week 16 (USPI population). Patients who did not achieve IGA 0/1 at Week 16 and/or used rescue medication. *P*-values compare tralokinumab (NRI: n=960; AO: n=898) versus placebo (NRI: n=358; AO: n=327). AO: as observed. DLQI: Dermatology Life Quality Index. EASI: Eczema Area and Severity Index. EASI-50: at least 50% improvement in EASI. IGA: Investigator's Global Assessment. NRI: non-responder imputation. NRS: numeric rating scale. Q2W: every 2 weeks. USPI: United States Prescribing Information.



**Fig. S3** Greater proportion of tralokinumab-treated patients achieved all three measures of clinically meaningful response relative to placebo at Week 16 (USPI population). Patients who did not achieve IGA 0/1 at Week 16 and/or used rescue medication. AO: as observed. DLQI: Dermatology Life Quality Index. EASI: Eczema Area and Severity Index. EASI-50: at least 50% improvement in EASI. NRI: non-responder imputation. n: number of subjects in analysis set. Q2W: every 2 weeks. USPI: United States Prescribing Information.



**Fig. S4** Greater proportion of tralokinumab-treated patients achieved EASI-75, EASI-90,  $\geq 3$ -point improvement in sleep NRS, and DLQI $\leq 5$  relative to placebo at Week 16 (USPI population). Patients who did not achieve IGA 0/1 at Week 16 and/or used rescue medication.  $P$ -values compare tralokinumab (NRI: n=960; AO: n=898) versus placebo (NRI: n=358; AO: n=327). AO: as observed. EASI: Eczema Area and Severity Index. EASI-75: at least 75% improvement in EASI. EASI-90: at least 90% improvement in EASI. IGA: Investigator's Global Assessment. NRI: non-responder imputation. NRS: numeric rating scale. Q2W: every 2 weeks. USPI: United States Prescribing Information.