

Company presentation

November 2021

NASDAQ: ASLN



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This presentation contains forward-looking statements. These statements are based on the current beliefs and expectations of the management of ASLAN Pharmaceuticals Limited (the “Company”). These forward-looking statements may include, but are not limited to, statements regarding the Company’s business strategy, the Company’s plans to develop and commercialize its product candidates, the safety and efficacy of the Company’s product candidates, including their potential to be best-in-class, the Company’s plans and expected timing with respect to clinical trials, clinical trial enrollment and clinical trial results for its product candidates, the Company’s plans and expected timing with respect to regulatory filings and approvals, the size and growth potential of the markets for the Company’s product candidates, and the potential for ASLAN004 as a first-in-class treatment for atopic dermatitis. The Company’s estimates, projections and other forward-looking statements are based on management’s current assumptions and expectations of future events and trends, which affect or may affect the Company’s business, strategy, operations or financial performance, and inherently involve significant known and unknown risks and uncertainties. Actual results and the timing of events could differ materially from those anticipated in such forward-looking statements as a result of these risks and uncertainties, which include, without limitation the risk factors described in the Company’s US Securities and Exchange Commission filings and reports (Commission File No. 001-38475), including the Company’s Form 20-F filed with the U.S. Securities and Exchange Commission (the “SEC”) on April 23, 2021.

This presentation discusses product candidates that are under clinical study and which have not yet been approved for marketing by the US Food and Drug Administration. No representation is made as to the safety or effectiveness of these product candidates for the use for which such product candidates are being studied. Caution should be exercised when comparing data across trials of different products and product candidates. Differences existing between trial designs and patient populations and characteristics. The results across such trials may not have interpretative value on our existing or future results.

All statements other than statements of historical fact are forward-looking statements. The words “believe,” “view,” “may,” “might,” “could,” “will,” “aim,” “estimate,” “continue,” “anticipate,” “intend,” “expect,” “plan,” or the negative of those terms, and similar expressions that convey uncertainty of future events or outcomes are intended to identify estimates, projections and other forward-looking statements. Estimates, projections and other forward-looking statements speak only as of the date they were made, and, except to the extent required by law, the Company undertakes no obligation to update or review any estimate, projection or forward-looking statement.



ASLAN Pharmaceuticals is a clinical-stage, immunology-focused biopharmaceutical company developing innovative therapies to treat inflammatory disease, transforming the lives of patients



Company highlights

- **Targeting major inflammatory disease markets with significant unmet need**
- ASLAN004 is a potential **first-in-class antibody targeting the IL-13 receptor that has the potential to improve upon current biologics** used to treat allergic disease
 - There are few safe and effective treatments for moderate-to-severe atopic dermatitis (AD), expected to be a \$24B market by 2029¹. Despite dupilumab advancing the standard of care, physicians / patients still seek additional options.
 - Topline data from recently completed multiple ascending dose (MAD) study conclusively establishes proof of concept for ASLAN004 in AD, and supports a potentially differentiated safety and efficacy profile
 - Preparations for Phase 2b underway, evaluating 2-weekly and 4-weekly regimens. FPI on track for 4Q 2021
- ASLAN003 is a second generation **DHODH inhibitor with the potential to be best-in-class** for autoimmune disease
 - Stronger *in vitro* potency and lower potential for hepatotoxicity compared to other DHODH inhibitors
 - Expecting to initiate phase 2 in IBD in 1H 2022. Planning future studies in autoimmune skin diseases
- **Strong cash position (\$100M²) with runway to late 2023**

¹ Decision Resources Group, June 2021

² As of Q3 ending September 30, 2021



Developing innovative therapies to treat inflammatory disease

Program	Target	Discovery	Preclinical	Phase 1	Phase 2	Anticipated milestones
ASLAN004	IL-13R α 1	Atopic dermatitis (AD)				<ul style="list-style-type: none"> Initiate Phase 2b in 4Q 2021
		Type 2-driven disease				
ASLAN003	DHODH	Inflammatory bowel disease				<ul style="list-style-type: none"> Initiate Phase 2 in 1H 2022
		Autoimmune skin disease				



ASLAN004



ASLAN004: potential first-in-class antibody targeting IL-13 receptor

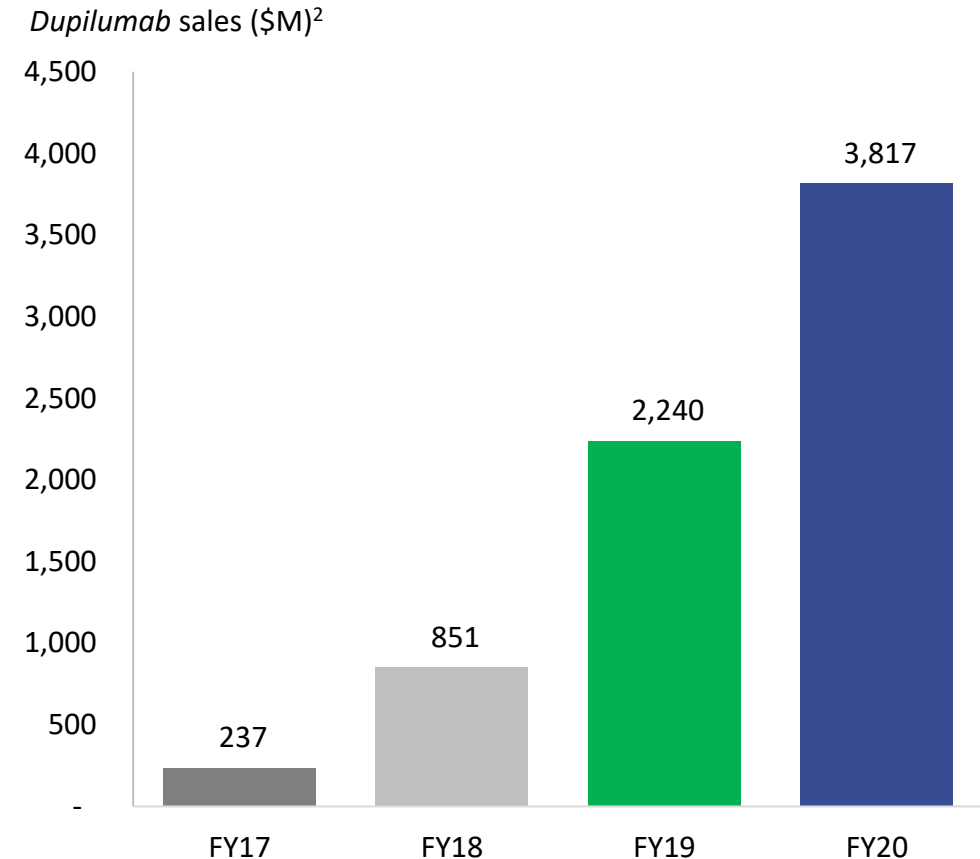
- Novel antibody targeting IL-13 receptor (IL-13R), blocking both IL-4 and IL-13 signaling through the Type 2 receptor
- Topline data from recently completed MAD study conclusively establishes proof of concept for ASLAN004 in AD, and supports a potentially differentiated safety and efficacy profile
 - ASLAN004 demonstrated a statistically significant improvement versus placebo in the primary efficacy endpoint of percent change from baseline in EASI (at 8 weeks)
 - ASLAN004 also showed statistically significant improvements in other key efficacy endpoints: EASI-50, EASI-75, peak pruritus, POEM
 - Well-tolerated with no emerging safety concerns
- Preparations for Phase 2b underway, evaluating 2-weekly and 4-weekly regimens. First patient in on track for 4Q 2021

Topline data demonstrate a potential best-in-class profile in terms of efficacy and safety



Dupilumab has advanced the standard of care for atopic dermatitis but a significant unmet need remains

- There are few safe and effective treatments for moderate-to-severe AD
- Treatment is traditionally focused on topical corticosteroids but steroid use can be associated with safety risks
- *Dupilumab* has established dual blockade of IL-4/IL-13 biologic therapy as the new standard of care
 - Launch of *dupilumab* in 2017 helped drive a large market for systemic AD therapy
 - Sanofi expects to grow sales to over \$11B
- However, there remains a significant unmet need:
 - Only 35% of patients treated with *dupilumab* achieved an optimal response¹
 - Conjunctivitis is common and can lead to treatment discontinuations
 - Opportunity to improve upon biweekly dosing regimen



¹ Spherix (2018) Atopic dermatitis ATU study

² Sanofi's published quarterly/ financials



ASLAN004 has the potential to be a differentiated therapy in AD

Ideal target product profile

Better efficacy
over current
standard-of-care

Efficacy



Monthly dosing,
improving convenience
and compliance

Dosing



Addresses physician
concerns on safety
with lower rate of
discontinuation

Safety

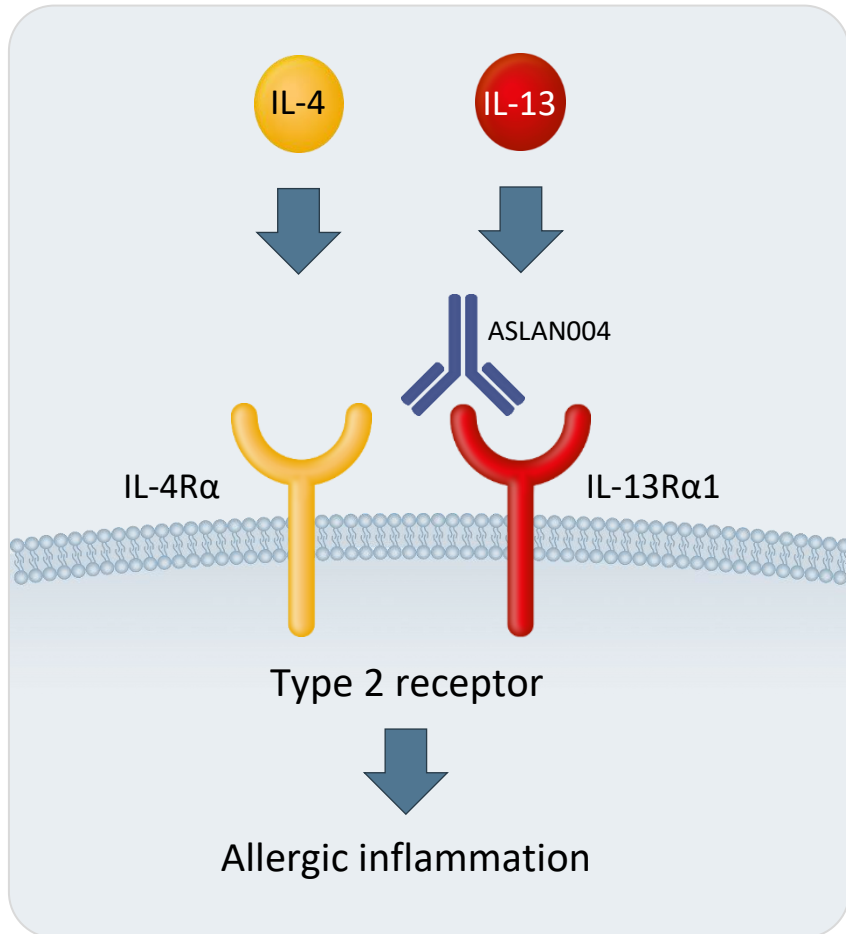


Greater storage
flexibility, allowing it to
be stored at room
temperature

Stability



ASLAN004 is the only monoclonal antibody in the clinic targeting the IL-13 receptor



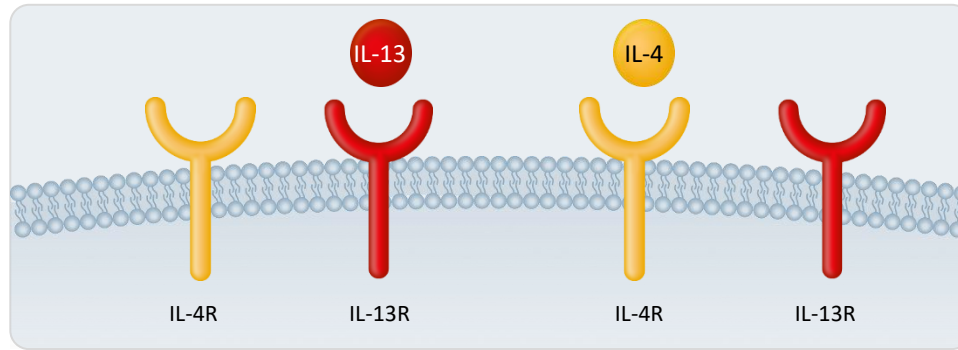
- IL-4 and IL-13 are central to triggering allergy and symptoms of atopic dermatitis
- By targeting the IL-13 receptor, ASLAN004 blocks the Type 2 receptor complex, preventing signaling through **both** IL-4 and IL-13

Potential for improved efficacy, safety and dose regimen:

- Selectively targets the Type 2 receptor. Blocking the Type 1 receptor may lead to unwanted effects
- Stronger binding to receptor than *dupilumab* relative to its respective ligand



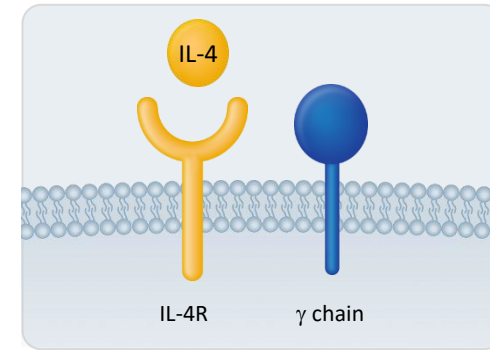
ASLAN004 selectively blocks the Type 2 receptor



Type 2 receptor

Blocks IL-13 signalling

Blocks IL-4 signalling



Type 1 receptor

Blocks IL-4 signalling

ASLAN004

Specific and complete blockade of Type 2 receptor

Lebrikizumab

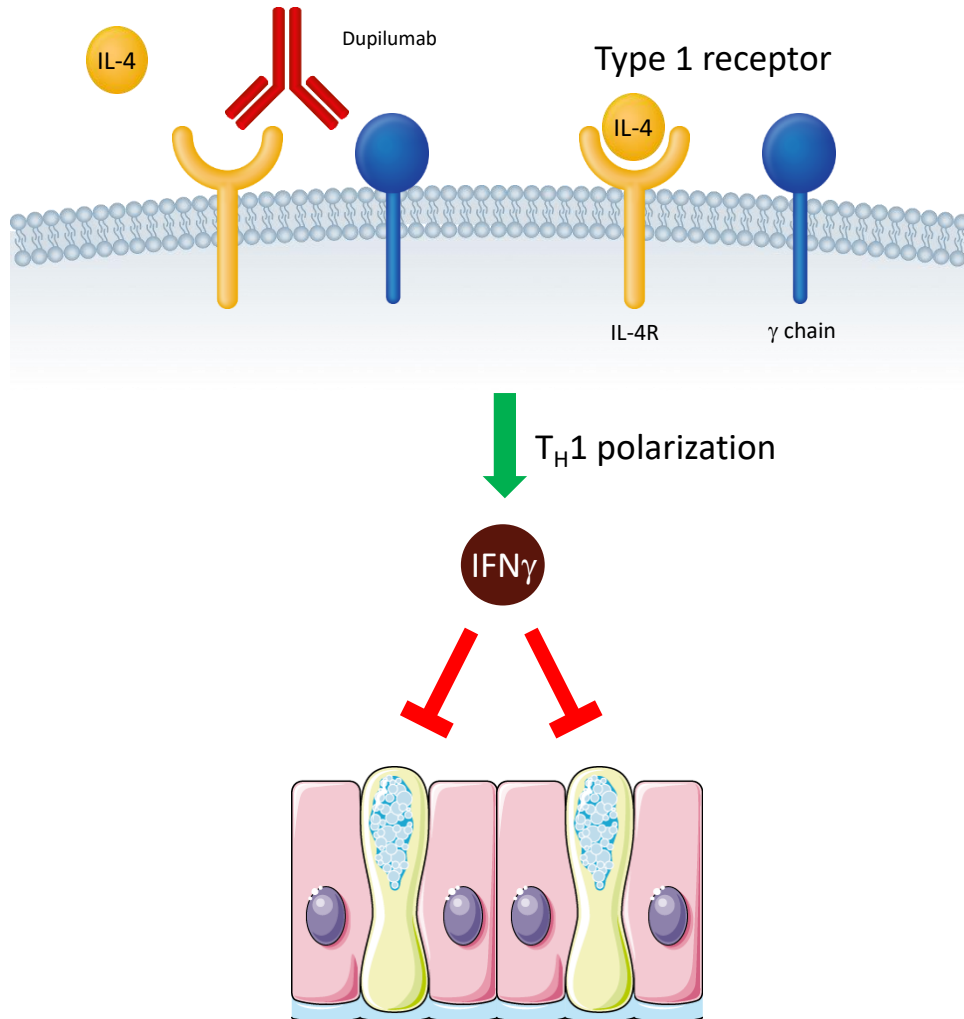
Partial blockade of Type 2 receptor signalling

Dupilumab

Broad blockade of Type 1 and Type 2 receptors



Dupilumab-associated conjunctivitis may be driven by inhibition of the Type 1 receptor, which ASLAN004 does not bind



Guttman-Yassky et al (2020) JAMA Derm 156:411

- *Dupilumab* blocks the Type 1 receptor
- This may drive T_H2 to T_H1 polarization
- T_H1 cells produce interferon gamma, which can lead to apoptosis of goblet cells
- This could lower the production of mucin and lead to development of dry eye and conjunctivitis

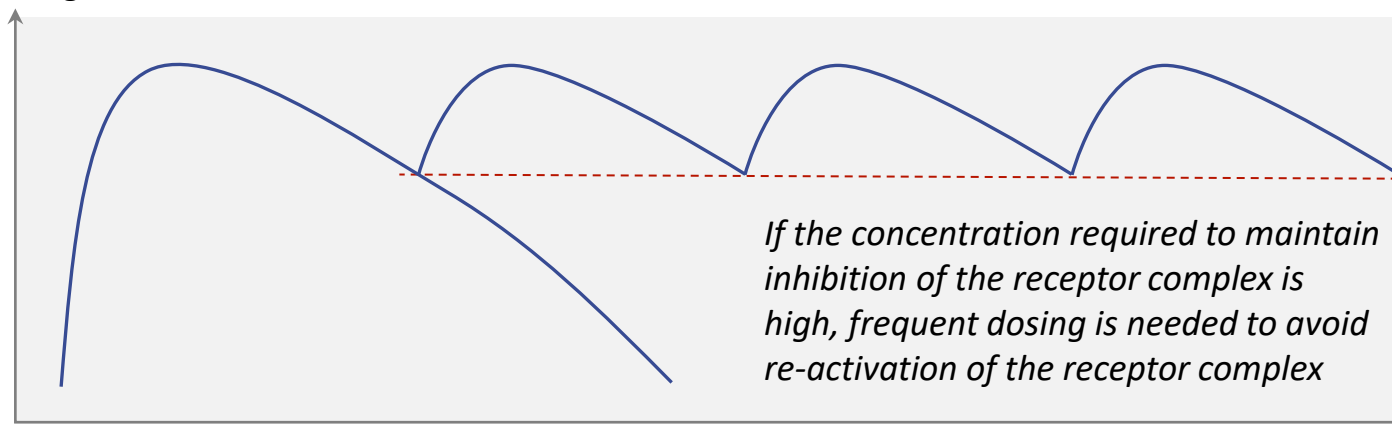


ASLAN004 binds more strongly to receptor than *dupilumab* relative to its respective ligand

Affinity of ligand and antibody to their respective target receptors:

Receptor	Ligand	K_D (nM)	Comments
IL-13R α 1	IL-13	30 ¹	ASLAN004 has a 60-fold higher affinity for receptor versus IL-13
IL-13R α 1	ASLAN004	0.5	
IL-4R α	IL-4	0.1 ¹	<i>Dupilumab</i> only has a 3-fold higher affinity for receptor versus IL-4
IL-4R α	<i>Dupilumab</i>	0.03	

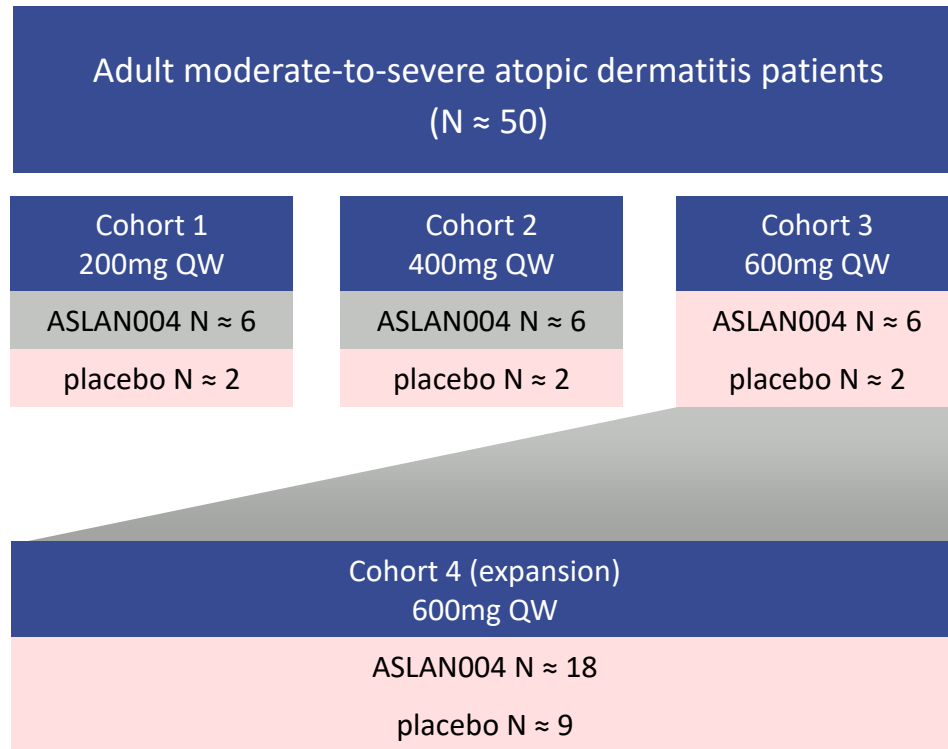
Drug concentration



ASLAN004 offers a greater affinity difference between ligand and receptor binding which may translate to lower required concentration *in vivo* and may provide improved dosing frequency and efficacy



Completed Proof of Concept study in moderate-to-severe AD



Study has 80% power to detect 39% improvement in EASI from baseline, compared to placebo, based on a one-sided 5% significance level

- Double-blind, randomized, placebo-controlled Phase 1 MAD study
- Patients dosed weekly via subcutaneous injection for 8 weeks with a 12-week recovery period
- Positive interim data from dose escalation (cohorts 1 to 3) announced in March 2021
- Cohort 4 (expansion) recruited additional patients dosed with 600mg QW
- Subsequent analysis compares patients in cohorts 3 and 4 dosed with 600mg QW against all placebos

Primary endpoints are safety and tolerability

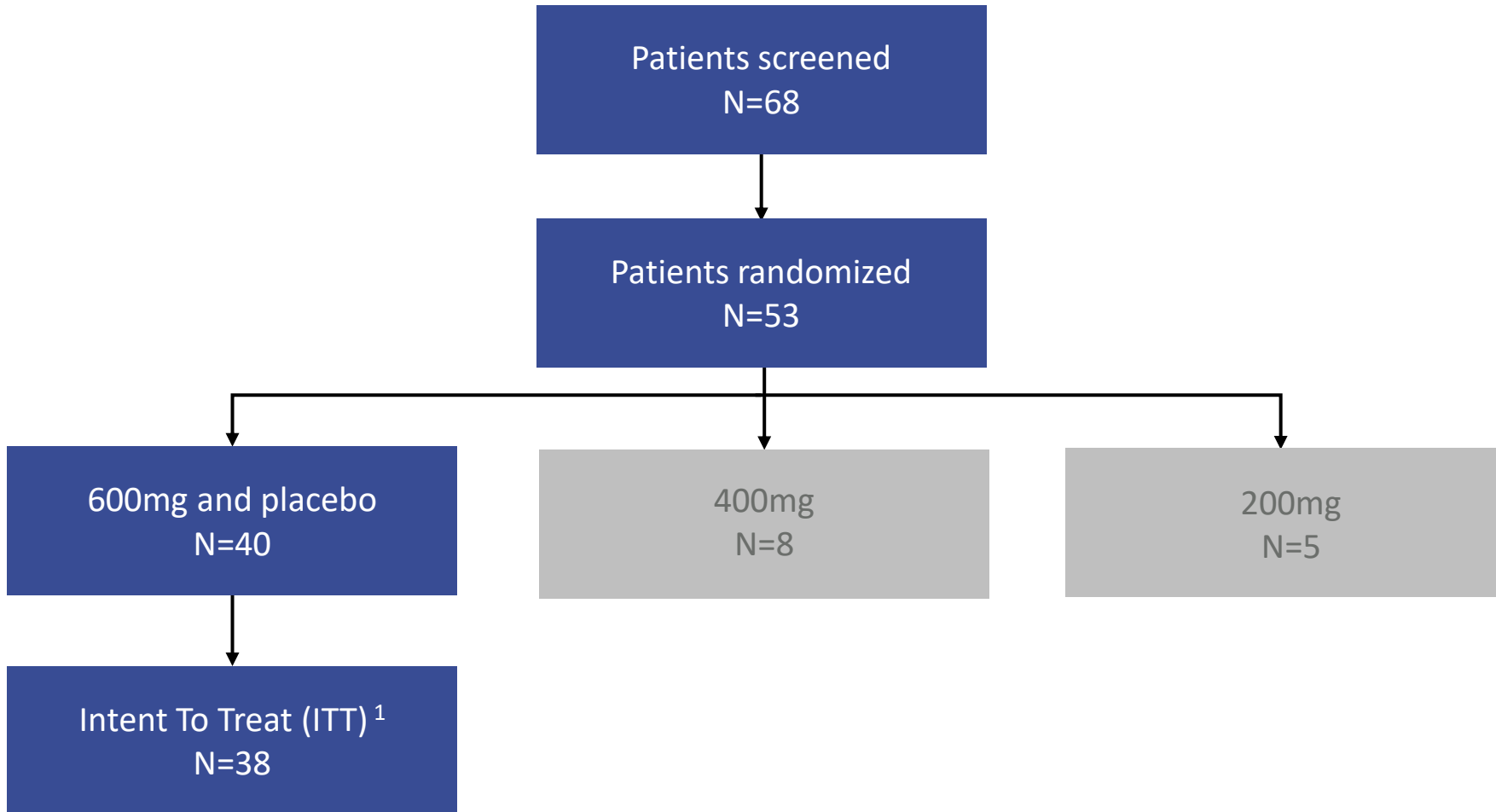
Secondary endpoints include percentage change from baseline in EASI (Eczema Area and Severity Index) score, pruritus score (numeric rating scale, NRS) and IGA (Investigator Global Assessment), and biomarkers TARC and IgE

Key inclusion criteria:

- Chronic AD present for ≥ 3 years before screening visit
- EASI score ≥ 16 at screening and baseline
- IGA score ≥ 3 (scale of 0 to 4) at screening and baseline
- $\geq 10\%$ BSA (Body Surface Area) of AD involvement at screening and baseline



Patients recruited from 10 sites in US, Australia and Singapore



1 ITT represents all patients dosed excluding one patient discontinued from study prematurely due to COVID-19 restrictions and one patient randomized but not dosed



Selected baseline patient characteristics

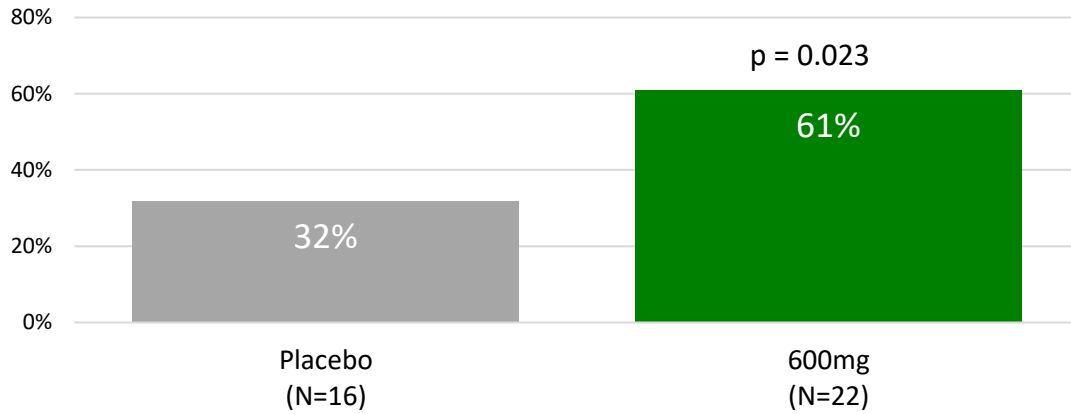
	ITT	
	600mg (N=22)	Placebo (N=16)
Age (years)	40.2	38.8
Mean EASI score	27.6	29.0
Mean BMI	25.5	26.7
Patients with IGA 3 / IGA 4	68% / 32%	63% / 38%
Mean BSA	41.0%	46.1%
Mean peak pruritus NRS score	7.9 ¹	7.9

1 N=19 as 3 patients did not have a baseline value

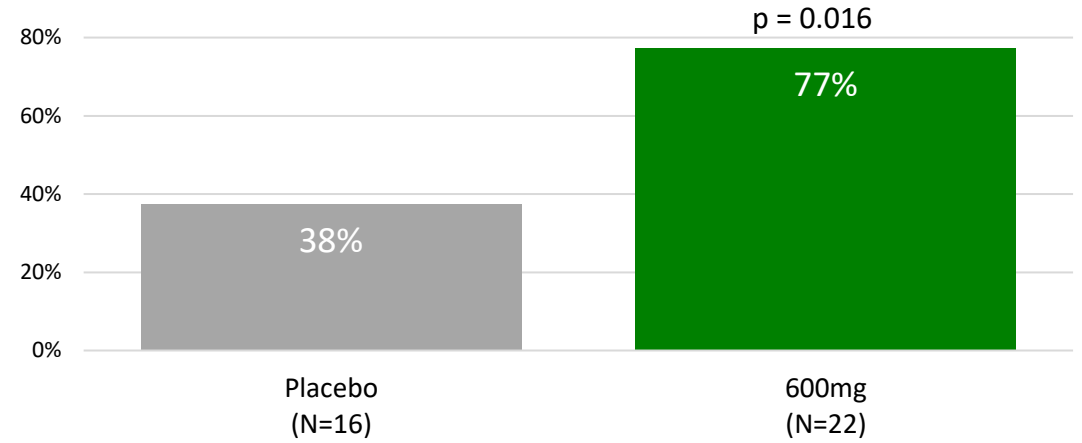


Key efficacy endpoints

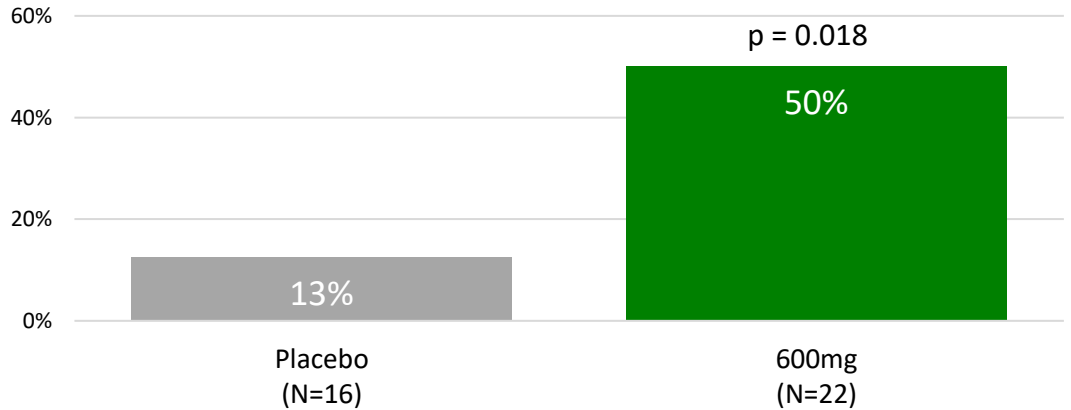
Mean reduction in EASI from baseline



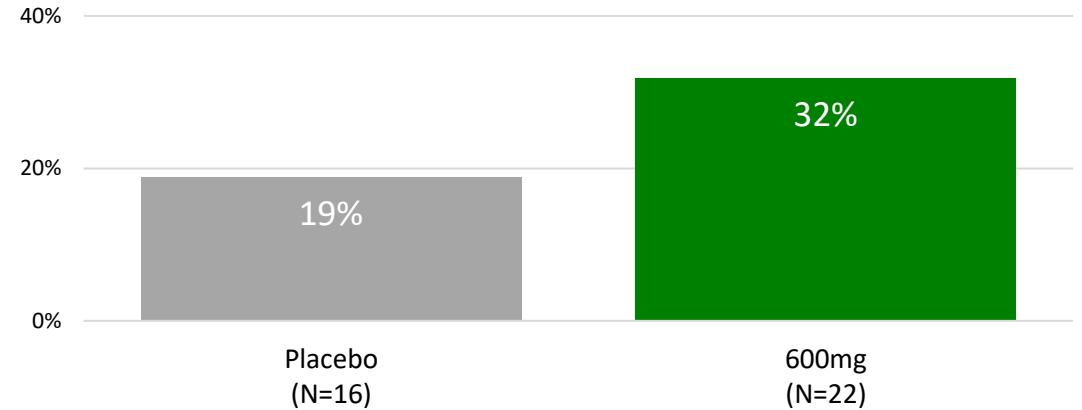
EASI-50



EASI-75

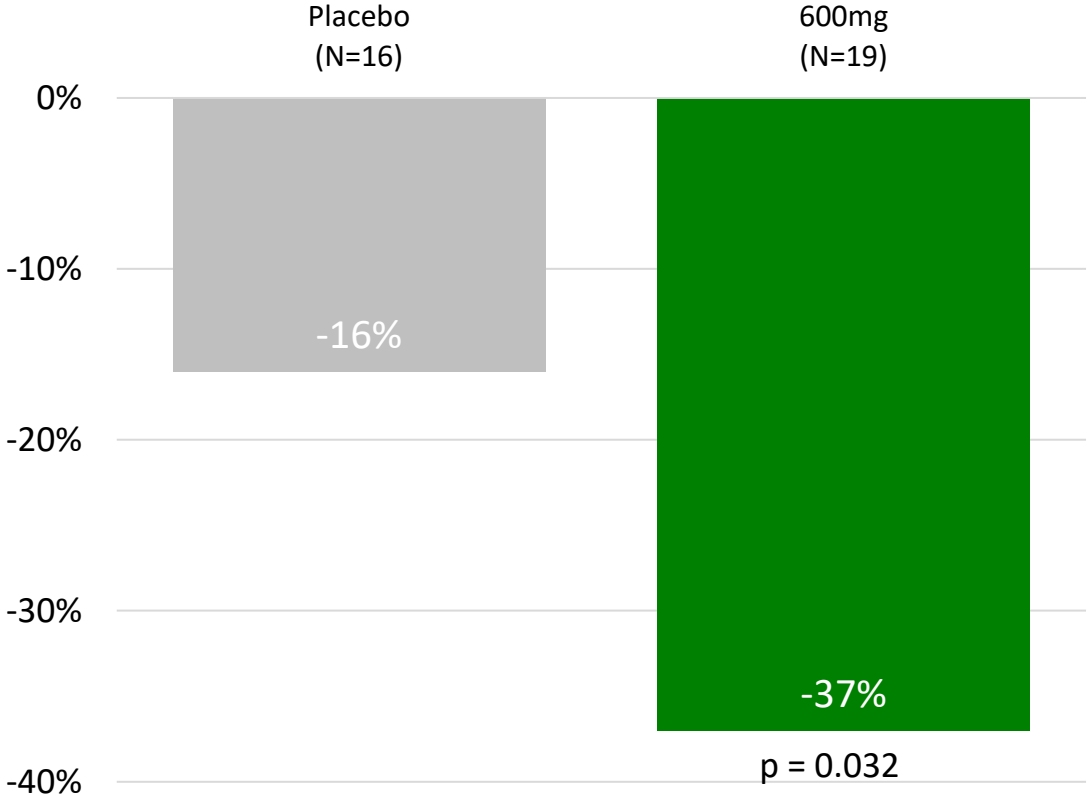


Patients achieving IGA 0/1

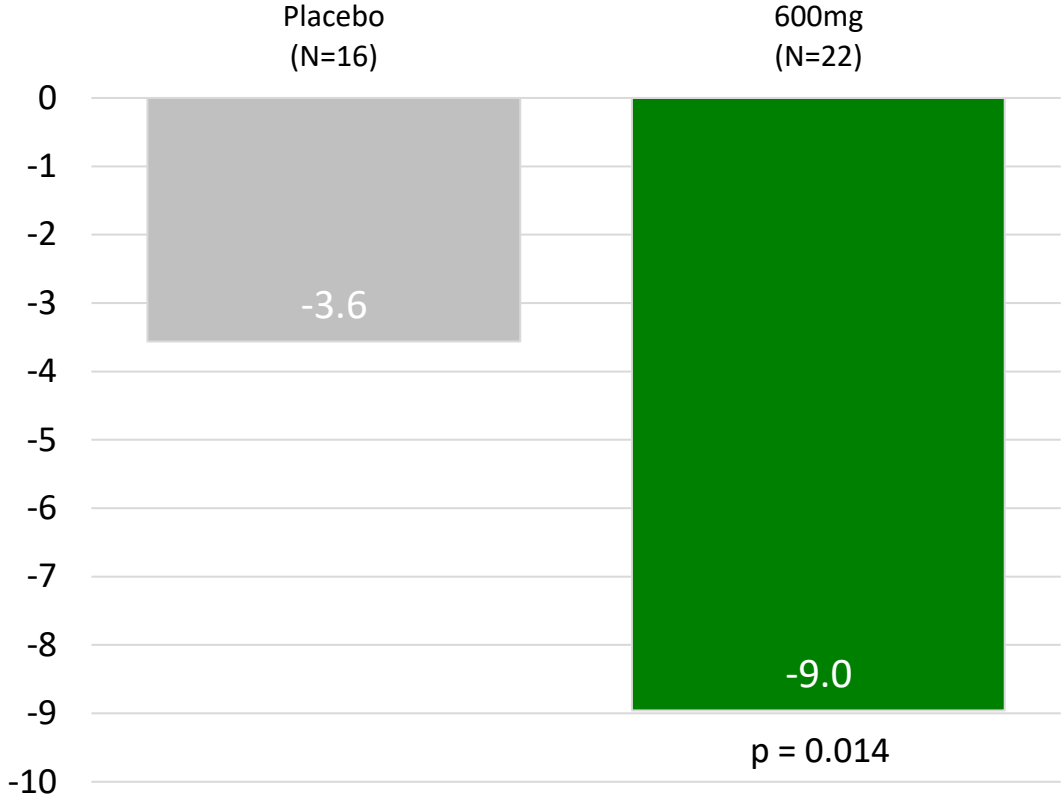


Patient reported endpoints

Mean change in peak P-NRS from baseline



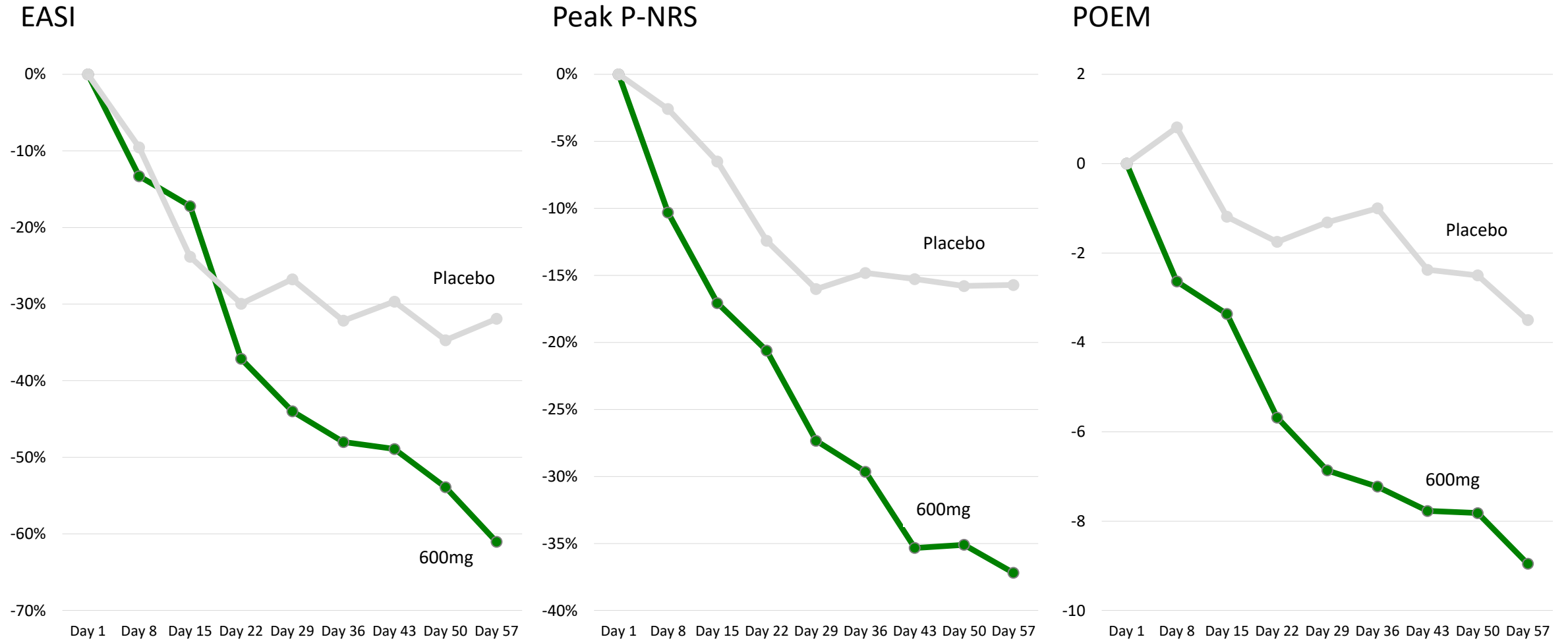
Mean change in POEM from baseline



Data from ITT population
p-values are one-sided



Time course (mean change from baseline)



Data from ITT population



ASLAN004 well-tolerated with low incidence of conjunctivitis

Treatment Emergent Adverse Event (TEAE) by category ¹	All patients dosed (N=52)		
	600mg (N=22)	200-600mg (N=35)	Placebo (N=17)
Any	12 (55%)	25 (71%)	8 (47%)
Related	8 (36%)	19 (54%)	7 (41%)
Moderate/severe	6 (27%)	11 (31%)	5 (29%)
Serious adverse event (SAE)	0 (0%)	1 (3%)	0 (0%)
Drug-related AEs of interest ² :			
• Injection site reaction	5 (23%)	9 (26%)	2 (12%)
• Conjunctivitis	1 (5%)	2 (6%)	0 (0%)

- Conjunctivitis was classified as mild. Patients had prior history of allergy or allergic conjunctivitis
- Rescue medication use: 3 patients on placebo arm, 1 patient on 600mg arm

¹ Safety data cutoff as of September 1, 2021, at which time all patients had completed at least 4 weeks of safety monitoring period.

² Drug-related defined as definitely related, probably related or possibly related



Sensitivity analysis was performed to analyze patient population more representative of mod/sev AD patients seen in other studies

- Sensitivity analysis was pre-specified and defined prior to unblinding
- All 9 patients at one clinical site appeared atypical of moderate-to-severe AD patient population and were excluded in sensitivity analysis
 - In a heterogeneous population, some patients may exhibit one or more of these elements, however unusual to see 9 out of 9 patients exhibit all elements at the same time

Low TARC

Average baseline TARC level at this site was 0.5 ng/ml (compared to average at other sites of 4.7 ng/ml and published range from *dupilumab* studies^{1,2} of 4.8 to 6.2 ng/ml). No patients at this site had TARC levels over 1.1 ng/ml

Low eosinophils

Baseline eosinophil levels were an order of magnitude lower than other sites and other comparable AD studies

Low IgE

Mean baseline IgE levels were over an order of magnitude lower than other sites and *dupilumab* studies^{1,2}

Few allergic co-morbidities

Almost all patients (89%) had no allergic co-morbidities (compared to 13% at other sites)

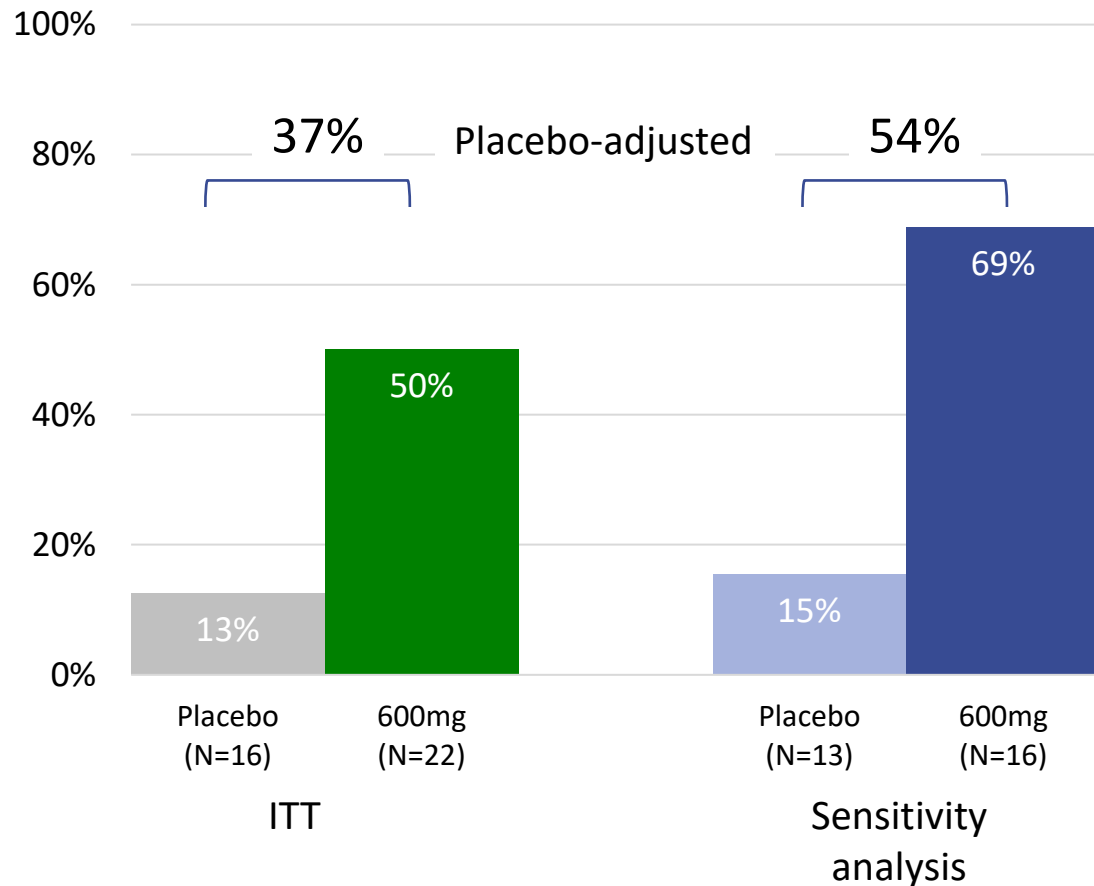
1 Beck et al (2014) N Engl J Med 2014;371:130-9

2 Hamilton et al (2019), 49th Annual ESDR Meeting Sep 18-21, 2019

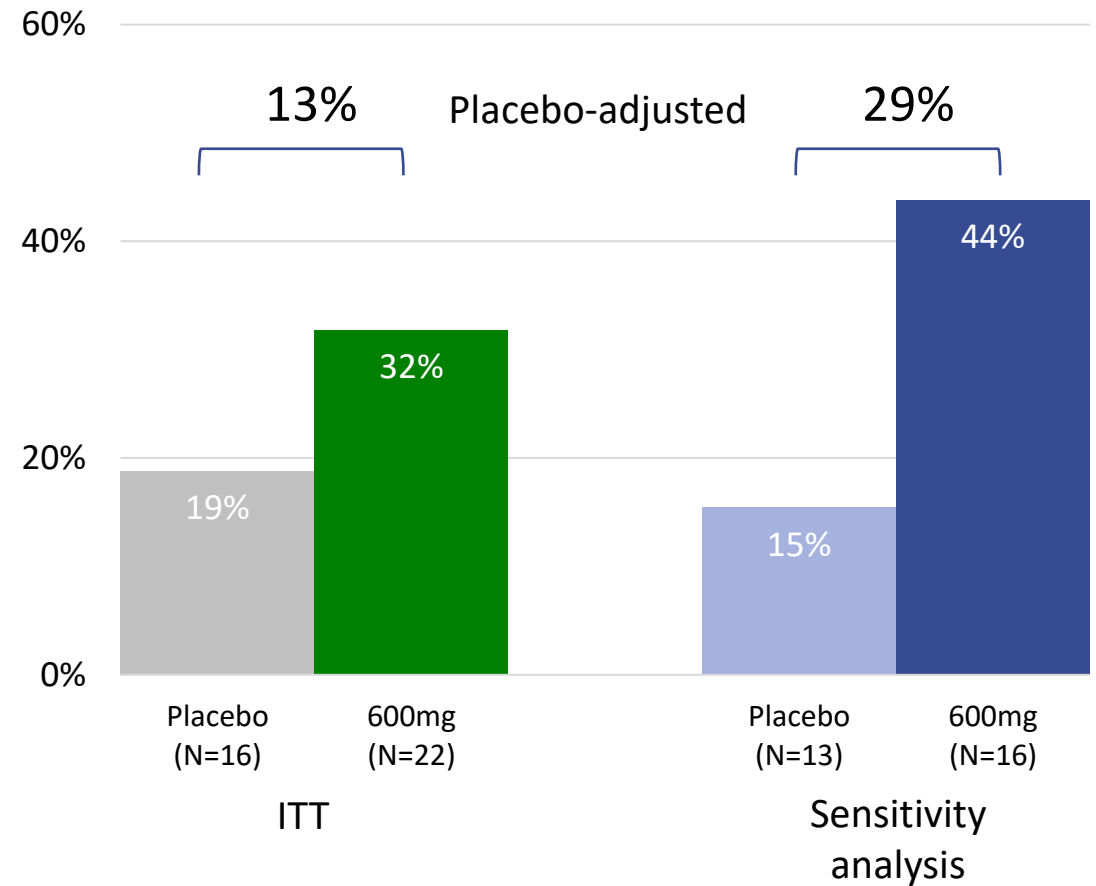


Sensitivity analysis suggests in a more typical moderate-to-severe AD patient population, efficacy may be further improved

EASI-75



Patients achieving IGA 0/1



Comparison of Proof of Concept studies in atopic dermatitis

Drug	Study	Target	Patients	Efficacy assessment at	Reached statistical significance?		
					ΔEASI score (%)	EASI-75	IGA 0/1
ASLAN004	Phase 1b (ITT)	IL-13R	38	8 weeks	✓	✓	
Dupilumab	Phase 1b (M4A+ M4B) ¹	IL-4R	67	4 weeks	✓		
	Phase 2a (M12) ¹	IL-4R	109	4 weeks			
				12 weeks	✓		✓
CBP201	Phase 1b ²	IL-4R	31	4 weeks			
KHK4083	Phase 1 ³	OX-40	20	6 weeks			

Data from Phase 1 studies of *lebrikizumab* and *tralokinumab* were not published

✓ represents two-sided p-value <0.05

1 Beck et al (2014) NEJM 371(2):130-139

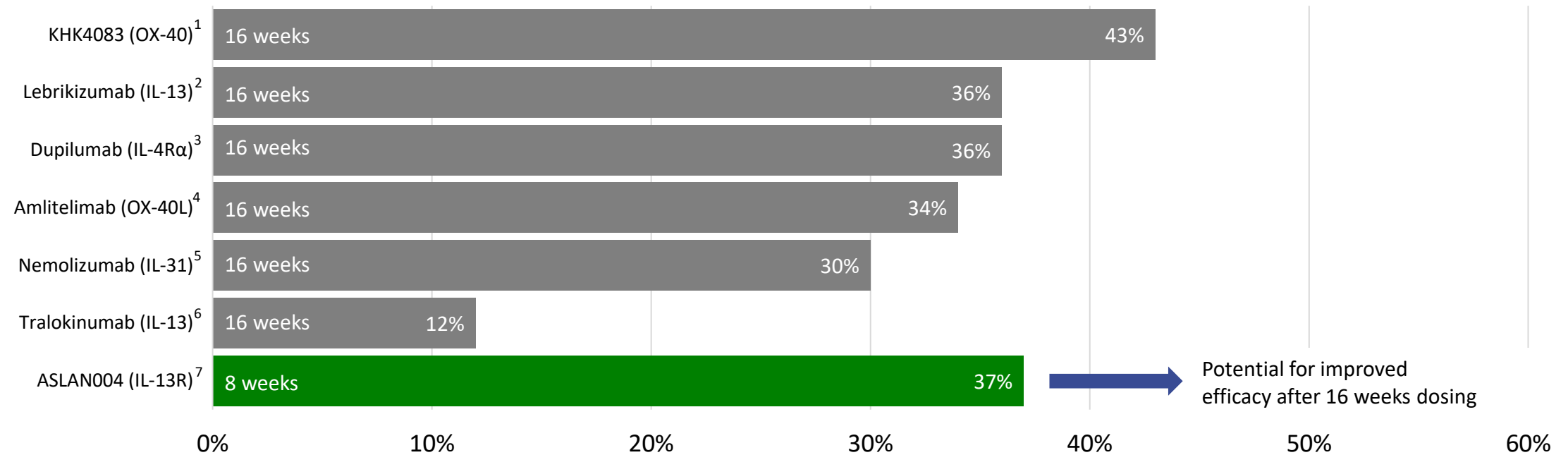
2 Wang et al (2020), 29th EADV Congress, Oct 28- Nov 1, 2020, p-value not disclosed

3 Nakagawa et al (2020) J Derm Sci 99:82-89, p-value not applicable (single-arm study)



The evolving landscape in AD

Efficacy of selected drugs in atopic dermatitis (placebo-adjusted EASI-75) at 16 weeks:



For illustrative purposes only. Not a head-to-head comparison. Caution should be exercised when comparing data across trials of different products and product candidates. Differences exist between trial designs and patient populations and characteristics. The results across such trials may not have interpretative value on our existing or future results.

1 Phase 2: Guttman-Yassky et al (2021), 30th EADV Congress, Sep 29- Oct 2, 2021

2 Phase 2b: Guttman et al (2020) JAMA Derm 156(4):411-420

3 Phase 3: Simpson et al (2016) NEJM 375(24):2335

4 Phase 2a: Weidinger et al (2021), 30th EADV Congress, Sep 29- Oct 2, 2021

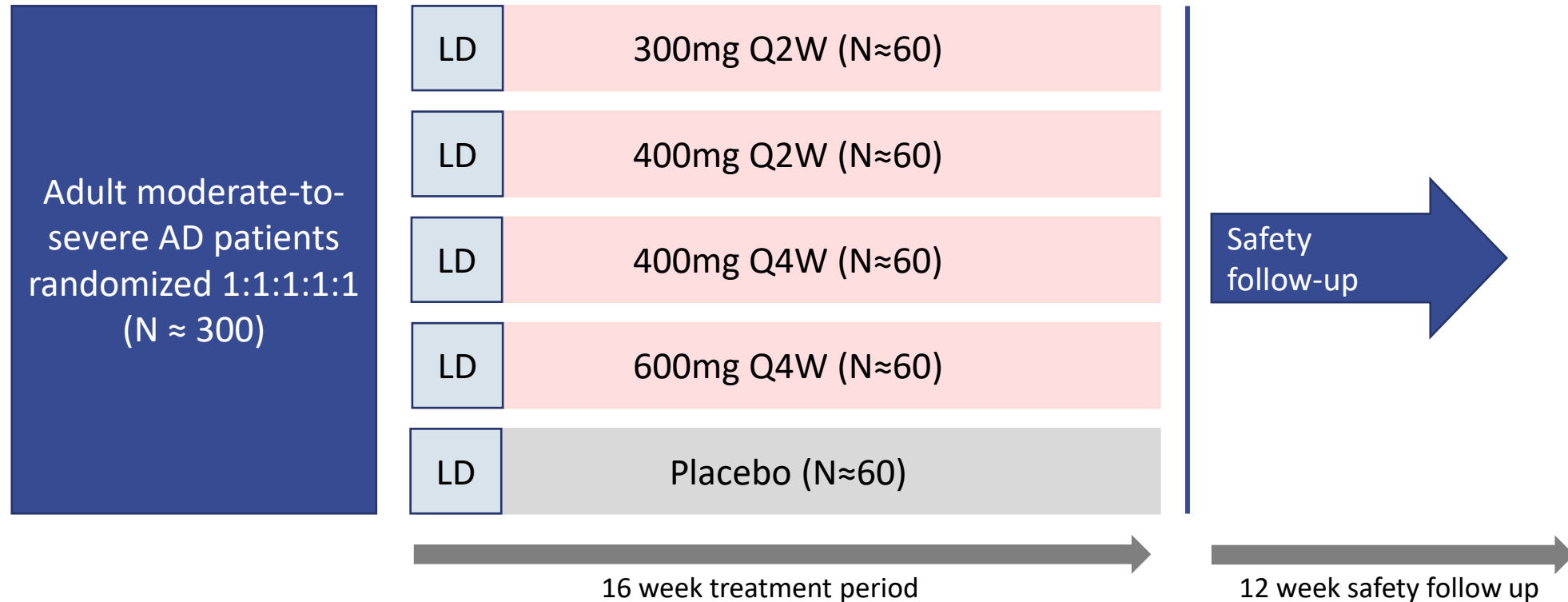
5 Phase 2b: Silverberg et al (2020) JACI 145:173-182

6 Phase 3: Wollenberg et al (2021) Br J Derm 184(3):437-449

7 Phase 1b: ITT population



Phase 2b expected to initiate in 4Q 2021



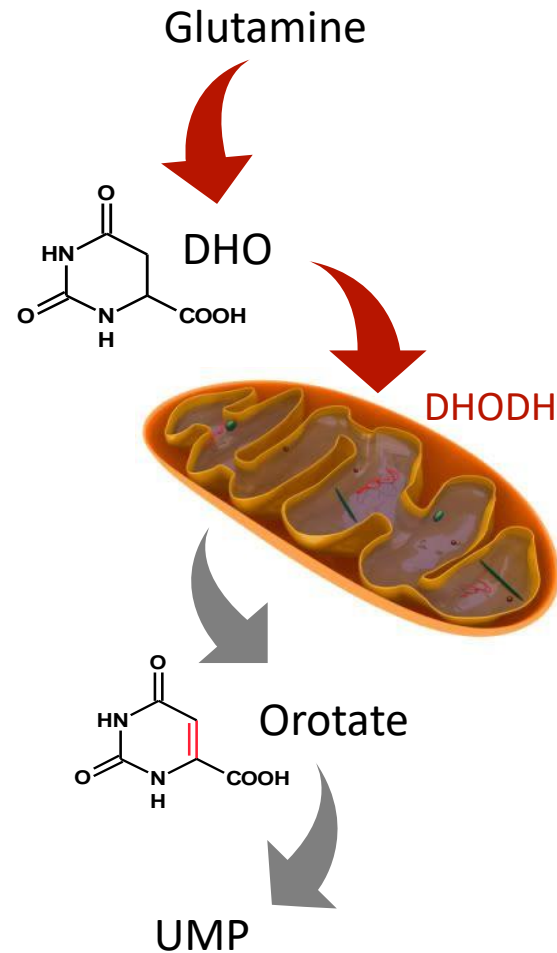
- Loading dose of 600mg for the Q2W dose groups at week 1 and week 2
- Loading dose of 600mg for the Q4W dose groups at week 1, week 2 and week 3



ASLAN003



DHODH is a validated target for autoimmune disease



- Cells synthesise pyrimidines via
 - *De novo* pathway (DHODH dependent)
 - Salvage pathway (DHODH independent)
- DHODH inhibition will block *de novo* synthesis, impacting rapidly dividing cells eg lymphocytes.
- Other cells can continue to use the salvage pathway and are unaffected
- First generation inhibitors are approved in MS (Aubagio) and RA (Arava), however they have limited potency and significant safety liabilities
- ASLAN003 was designed to be more potent and to address the toxicities associated with first generation inhibitors



DHODH is an attractive target for IBD

Leflunomide

- 2nd line treatment in Crohn's disease (CD) patients refractory or intolerant to *azathioprine*¹
 - In 24 patients steroid free remission was 42% by week 16
 - Crohn's Disease Activity Index (CDAI) decreased from 219 to 87
 - Steroid intake decreased from 25 to 3 mg/day
 - Adverse side effects were frequent
- CD patients intolerant to *azathioprine*/6-MP²
 - *Leflunomide* well tolerated with significant reduction in clinical score in 8/12 patients

Vidofludimus

- Phase 2a ENTRANCE study in steroid-dependent CD and ulcerative colitis (UC)³
 - After 12 weeks of treatment, 8 out of 14 (57%) patients with CD and 6 out of 12 (50%) patients with UC were in steroid-free remission (complete responders)

1 Holtmann et al (2008) Dig Dis Sci 53:1025-1032

2 Prajapati et al (2003) J Clin Gastroenterol 37(2):125-128

3 Herrlinger et al (2013) J Crohns Colitis 7:636-643



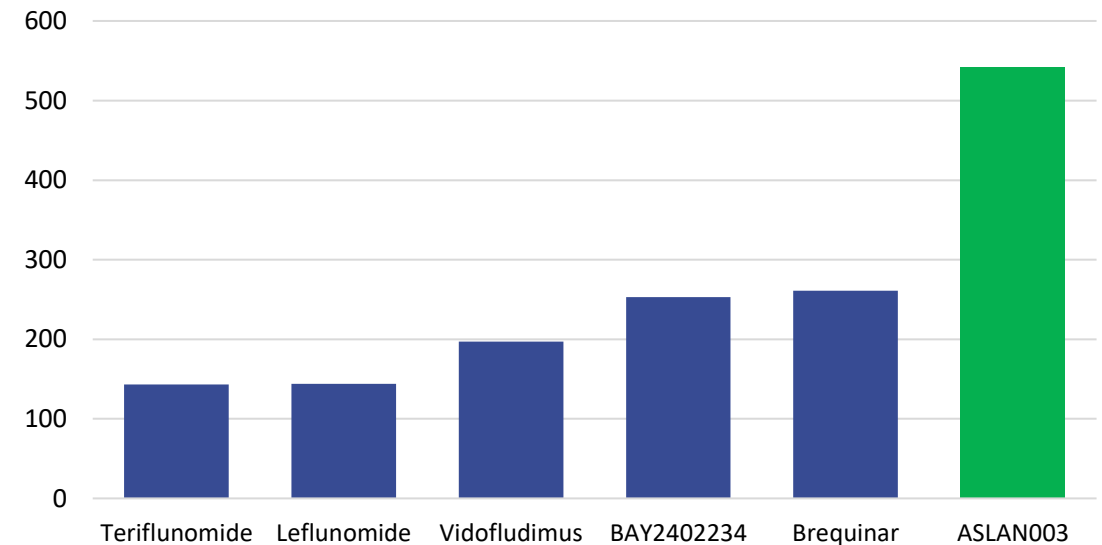
ASLAN003 has the potential to be best-in-class for autoimmune disease

- Stronger *in vitro* potency as compared with other DHODH inhibitors
- Selective against a panel of 195 enzymes, ion channels and receptor binding assays

Assay used to measure IC ₅₀	ASLAN003 (μM)	Teriflunomide (μM)
Enzymatic DHODH inhibition	0.035	1.1
Human PBMC proliferation inhibition	1.4	46
IFN _γ inhibition in human whole blood	2.5	259

- *In vitro* studies demonstrated ASLAN003 has lowest potential for hepatotoxicity out of 6 approved and clinical stage DHODH inhibitors

Concentration (μM IC₅₀) required to induce mitochondrial toxicity in HepaRG cells at 24 hours

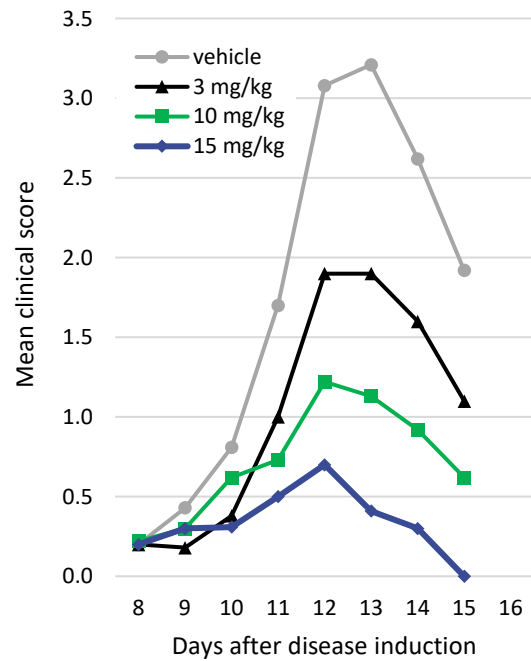


Jones et al (2021) Toxicology in Vitro 72:105096

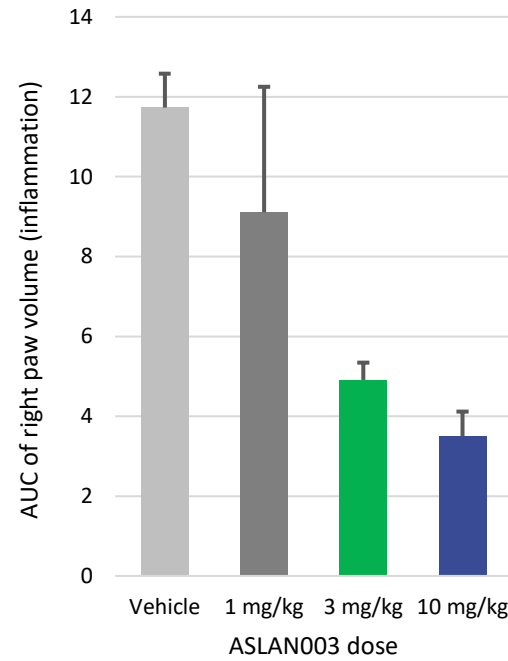


ASLAN003 has the potential to be best-in-class for autoimmune disease

- Active in the multiple sclerosis EAE model and rheumatoid arthritis AIA model

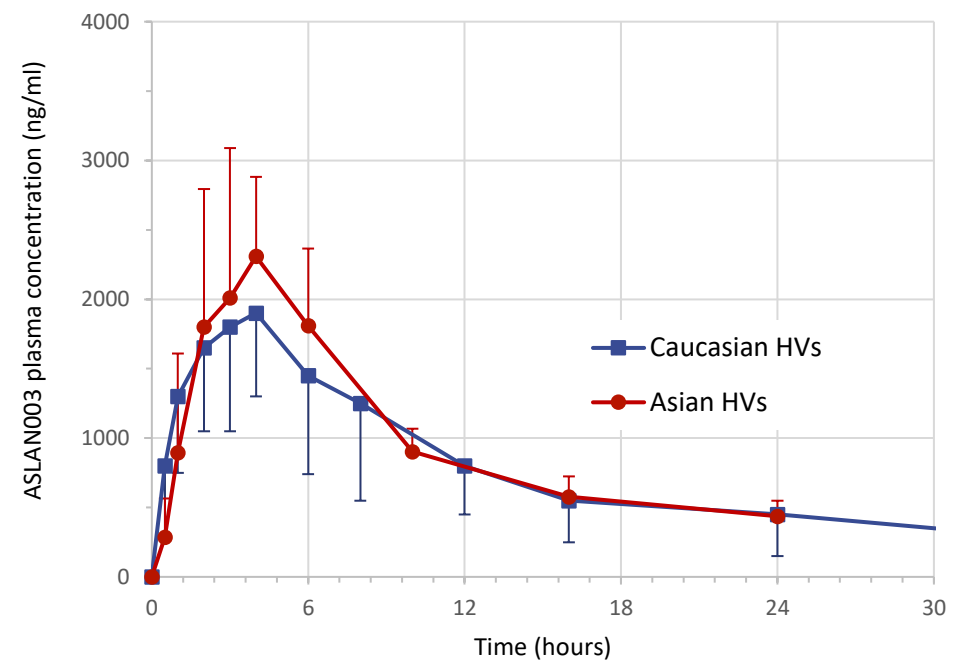


MS model in rat (EAE)



RA model in rat (AIA)

- Well-tolerated in 119 subjects in Phase 1 and Phase 2 clinical trials
- PK profile suitable for once-daily dosing



Single dose pharmacokinetics



Summary of ASLAN003

ASLAN003 has the potential to be best-in-class for autoimmune disease

- Stronger *in vitro* potency as compared with other DHODH inhibitors
- Selective against a panel of 195 enzymes, ion channels and receptor binding assays
- *In vitro* studies demonstrated ASLAN003 has lowest potential for hepatotoxicity out of 6 approved and clinical stage DHODH inhibitors
- Well-tolerated in 119 subjects in Phase 1 and Phase 2 clinical trials
- PK profile suitable for once-daily dosing

Next steps

- Expecting to initiate phase 2 in IBD in 1H 2022
- Planning future studies in autoimmune skin diseases



Financials



Financials

Ticker	NASDAQ: ASLN	
Shares outstanding ¹	69.7M ¹	(as of September 30, 2021)
Net operating cash used	US\$ 7.6M	(3Q 2021)
Cash balance	US\$ 100.5M	(as of September 30, 2021)
	Runway through to late 2023	

¹ American Depositary Shares

