

— ARCADIA Clinical Trial Program Media Factsheet —

The burden of atopic dermatitis

Atopic dermatitis is a common and chronic form of eczema characterized by persistent, disruptive itch (pruritus), inflammatory skin lesions and frequent skin infections.^{1,2}

Atopic dermatitis has a significant negative impact on health-related quality of life.^{3,4,5}

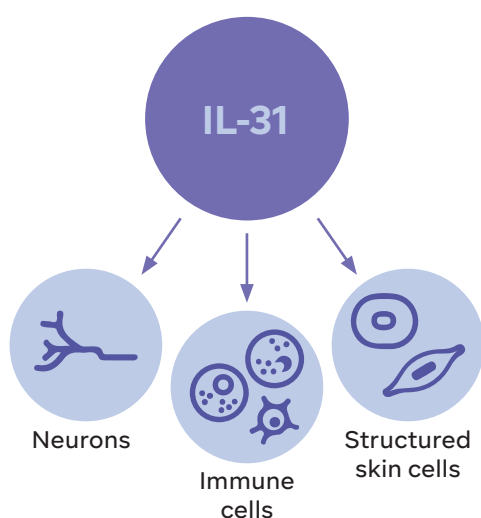
There are presently **limited therapeutic options** targeting the neuroimmune pathophysiology that is at the core of atopic dermatitis. For this reason, there is a **need** for novel, safe and effective treatments that directly address the underlying disease mechanism.^{4,5}

Atopic dermatitis affects **more than 230 million people worldwide**. Prevalence ranges from 1% to 25% of the population, depending on the geography and age range. It's estimated that between 41% and 75% of adult patients have moderate to severe atopic dermatitis.^{4,6,7}

Introducing nemolizumab

Nemolizumab is a monoclonal antibody specifically designed to target the IL-31 receptor and inhibit IL-31 signaling.

IL-31 is recognized as a **central mediator** in the pathogenesis of atopic dermatitis. It acts as a bridge between the immune and nervous systems, targeting both structural skin cells and inflammatory cells, thereby driving inflammation, itch, and skin abnormalities.⁸



Nemolizumab is also being investigated in a **phase III program in prurigo nodularis**, a debilitating chronic skin condition characterized by thick skin nodules covering large body areas and associated with intense itch, and a **phase II/III trial** for Chronic Kidney Disease-associated pruritus (CKD-aP).

What are the ARCADIA trials?

The ARCADIA 1 and 2 trials were two identical, pivotal, randomized, double-blind, placebo-controlled phase III clinical trials that assessed the efficacy and safety of nemolizumab, compared to placebo (both administered with background topical corticosteroid therapy or topical calcineurin inhibitors), in adolescent and adult patients with moderate to severe atopic dermatitis.

The trials investigated nemolizumab in more than 1,500 patients with atopic dermatitis.

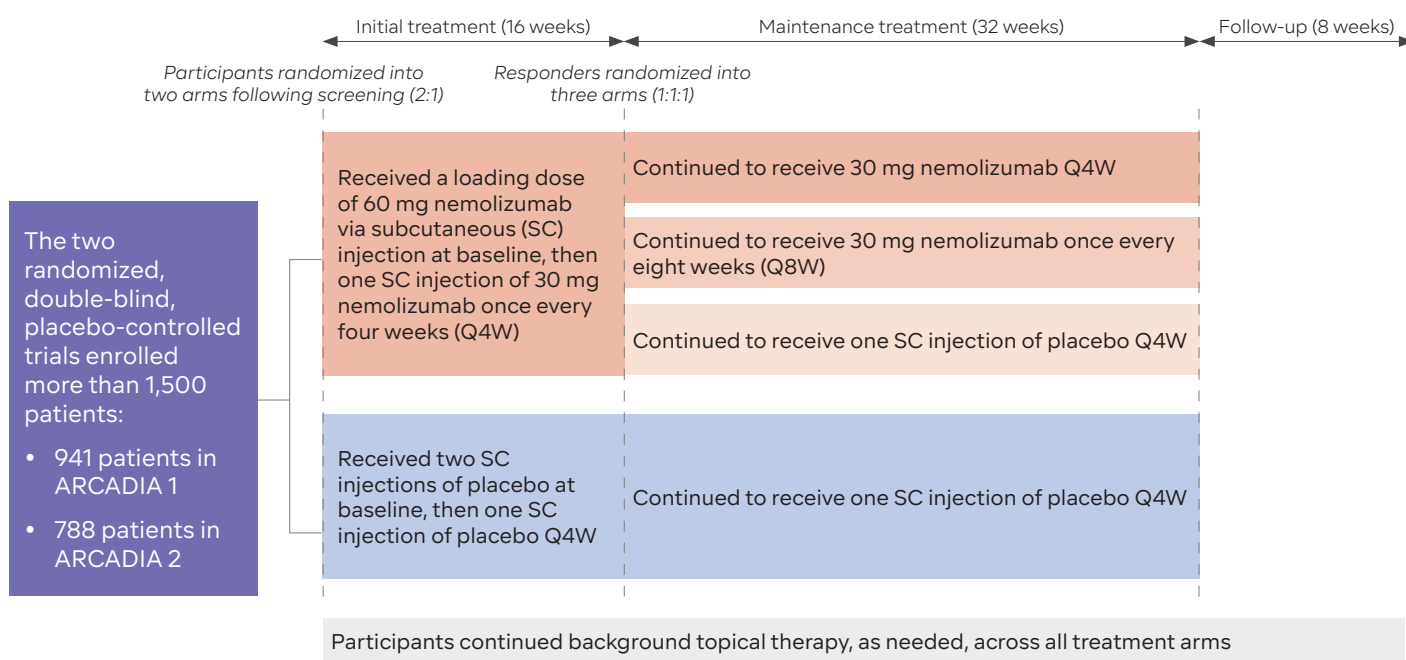
The trials have **two primary endpoints**:

1. The number of nemolizumab-treated patients who reached clearance or almost-**clearance of skin lesions**, when assessed using the investigator's global assessment (IGA) score, compared to those treated with placebo.
2. The number of nemolizumab-treated patients who achieved a **75% reduction in the Eczema Area and Severity Index (EASI)**, compared to those treated with placebo.

Key secondary endpoints include:

- The number of nemolizumab-treated patients who achieved an at least four-point **reduction in itch**, as measured by the peak-pruritus numerical rating scale (PP-NRS) score at week 16, compared to those treated with placebo.
- The proportion of nemolizumab-treated patients with an **improvement** of at least four points from baseline in **sleep disturbance**, as measured by sleep disturbance numerical rating scale (SD-NRS) at week 16, compared to those treated with placebo.

Trial design



The trials were identical in design but differed in the number of patients enrolled and were conducted in different countries and/or trial locations. In addition, a small group of patients enrolled in the ARCADIA 1 study also participated in an optional interview to understand patients' perspective about the disease and treatment benefit.

Trial results^{10,11}

The phase III ARCADIA 1 and 2 trials met **both co-primary endpoints**, showing that nemolizumab significantly improved skin lesions and itch in adolescent and adult patients with moderate to severe atopic dermatitis, compared to placebo (both administered with background topical corticosteroid therapy or topical calcineurin inhibitors). In both trials, adolescent and adult patients treated with nemolizumab showed clinically and statistically significant improvements in co-primary endpoints, compared to placebo after 16 weeks of treatment.

The trials also met all key secondary endpoints including **significant improvement on itch and sleep** compared to placebo. Statistically significant results at week 16 and earlier time points also show nemolizumab's rapid onset of action on itch and sleep disturbance. Nemolizumab was well tolerated, and its safety profile was consistent between the ARCADIA 1 and 2 studies.

The ARCADIA trials further demonstrate that nemolizumab has the potential to be a therapeutic solution for patients suffering from moderate to severe atopic dermatitis.

Regulatory status

Nemolizumab is approved in Japan, where it is being developed by Maruho Co. Ltd., for itch associated with atopic dermatitis.

With Galderma, nemolizumab is under clinical development for the treatment of prurigo nodularis and atopic dermatitis in many countries around the world. Nemolizumab was granted Breakthrough Therapy designation by the FDA in December 2019 for the treatment of itch associated with prurigo nodularis.

Galderma has exclusive rights to the development and marketing of nemolizumab worldwide except in Japan and Taiwan.

References:

1. Langan SM, Irvine AD, Weidinger S. Atopic dermatitis [published correction appears in Lancet. 2020;396(10253):758. Lancet. 2020;396(10247):345-360. doi:10.1016/S0140-6736(20)31286-1
2. Ständer S. Atopic dermatitis. N Engl J Med. 2021;384(12):1136-1143. doi:10.1056/NEJMr2023911
3. Silverberg JI, et al. Patient burden and quality of life in atopic dermatitis in US adults: a population-based cross-sectional study. Ann Allergy Asthma Immunol. 2018;121(3):340-347. doi:10.1016/j.anai.2018.07.006
4. Urban K, et al. The global, regional, and national burden of atopic dermatitis in 195 countries and territories: An ecological study from the Global Burden of Disease Study 2017. JAAD Int. 2021;2:12-18. doi:10.1016/j.jdin.2020.10.002
5. Silverberg JI. Comorbidities and the impact of atopic dermatitis. Ann Allergy Asthma Immunol. 2019;123(2):144-151. doi:10.1016/j.anai.2019.04.020
6. Silverberg JI. Public Health Burden and Epidemiology of Atopic Dermatitis. Dermatol Clin. 2017;35(3):283-289. doi:10.1016/j.det.2017.02.002
7. Silverberg JI. Adult-Onset Atopic Dermatitis. J Allergy Clin Immunol Pract. 2019;7(1):28-33. doi: 10.1016/j.jaip.2018.09.029
8. Datsi A, et al. Interleukin-31: The "itchy" cytokine in inflammation and therapy. Allergy. 2021;76:2982-2997. doi: 10.1111/all.14791
9. Silverberg JI, et al. Nemolizumab is associated with a rapid improvement in atopic dermatitis signs and symptoms: subpopulation (EASI ≥ 16) analysis of randomized phase 2B study. JEADV. 2021. doi: 10.1111/jdv.17218
10. Silverberg JI, et al. Nemolizumab improves skin lesions, itch and sleep disturbance in patients with moderate-to-severe atopic dermatitis: Results from two identical phase 3 multinational studies (ARCADIA 1 and ARCADIA 2). Late-breaking abstract presented at EADV 2023.
11. ClinicalTrials.gov. Efficacy and Safety of Nemolizumab in Subjects With Moderate-to-Severe Atopic Dermatitis. Available online: <https://clinicaltrials.gov/study/NCT03985943>. Last accessed October 2023