

“Pearls”  
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Veterinary Medicine



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## Dermatology – Products

### Anti-cytokine drugs for canine atopy

**Cytopoint** (lokivetmab), a caninized monoclonal antibody targeting interleukin-31, provides rapid antipruritic efficacy within 8–24 hours by blocking IL-31RA/OSMR $\beta$  signaling. Its mechanism is highly specific, conferring a **superior safety profile with limited impact on hematopoiesis or broad immune function**. It is indicated for **long-term control** of atopic and allergic dermatitis, particularly in patients where immunosuppression is a contraindication. Rare anti-drug antibody formation may neutralize its effects.

Conversely, JAK inhibitors (oclacitinib (Apoquel), ilunocitinib (Zenrelia)) and calcineurin inhibitors (cyclosporine, tacrolimus) function via broader biochemical pathways. **Apoquel** (JAK1-selective) and **Zenrelia** (multi-kinase JAK/TYK2 inhibitor) offer potent pruritus control but **necessitate vigilant monitoring for infection, demodicosis, or neoplastic progression due to systemic cytokine suppression**.

In an *Elanco-funded* study of 338 dogs comparing Zenrelia to Apoquel, Zenrelia demonstrated superior efficacy over Apoquel in achieving pruritus remission (77% vs. 53% at day 112) and showed numerically higher rates of skin lesion

remission (69% vs 64% by day 112) [ref].

The newest JAK inhibitor is **Numelvi** (atinvicitinib): see the article below.

**Cyclosporine** induces T-cell suppression via calcineurin inhibition; it is effective for chronic management but requires caution regarding vaccine responses and comorbidities like diabetes. Topical **tacrolimus 0.1% is indicated for focal lesions** where systemic immunosuppression is undesirable.

[Wichtowska, A.; Olejnik, M. Anti-Cytokine Drugs in the Treatment of Canine Atopic Dermatitis. Int. J. Mol. Sci. 2025, 26, 10990. Cap Rep \(2026\).44\(8\):1](#)

### Befrena, an alternative to Cytopoint

**Befrena** (tirnovetmab) is a monoclonal antibody that neutralizes canine IL-31, similar to Cytopoint, and is indicated for the control of pruritus associated with allergic dermatitis in dogs. It begins working within 24 hours and is labeled for SC injection **every 6 to 8 weeks**, although it has been shown to be safe when given every 4 weeks. There is **no age or weight restriction**.

In field studies, Befrena was used safely in combination with Apoquel, Zenrelia, and cyclosporine, and its overall safety profile was similar to placebo. Adverse events that occurred at least 5% more frequently than placebo included lethargy (5.7%), injection site reactions such as pain, lesions, or edema (combined ~ 8%), and elevated liver enzymes (5%). Befrena has not been tested in pregnant animals. As a monoclonal antibody, it may induce anti-drug antibodies that can reduce efficacy or, in rare cases, cause immune-mediated adverse reactions.

All clinical trials showing reduced pruritus and improved skin scores (PVAS and CADESI-4) are internal company data, as there are currently no peer-reviewed published studies available. Befrena was originally developed by KindredBio and acquired by Elanco in 2021 [ref].

