

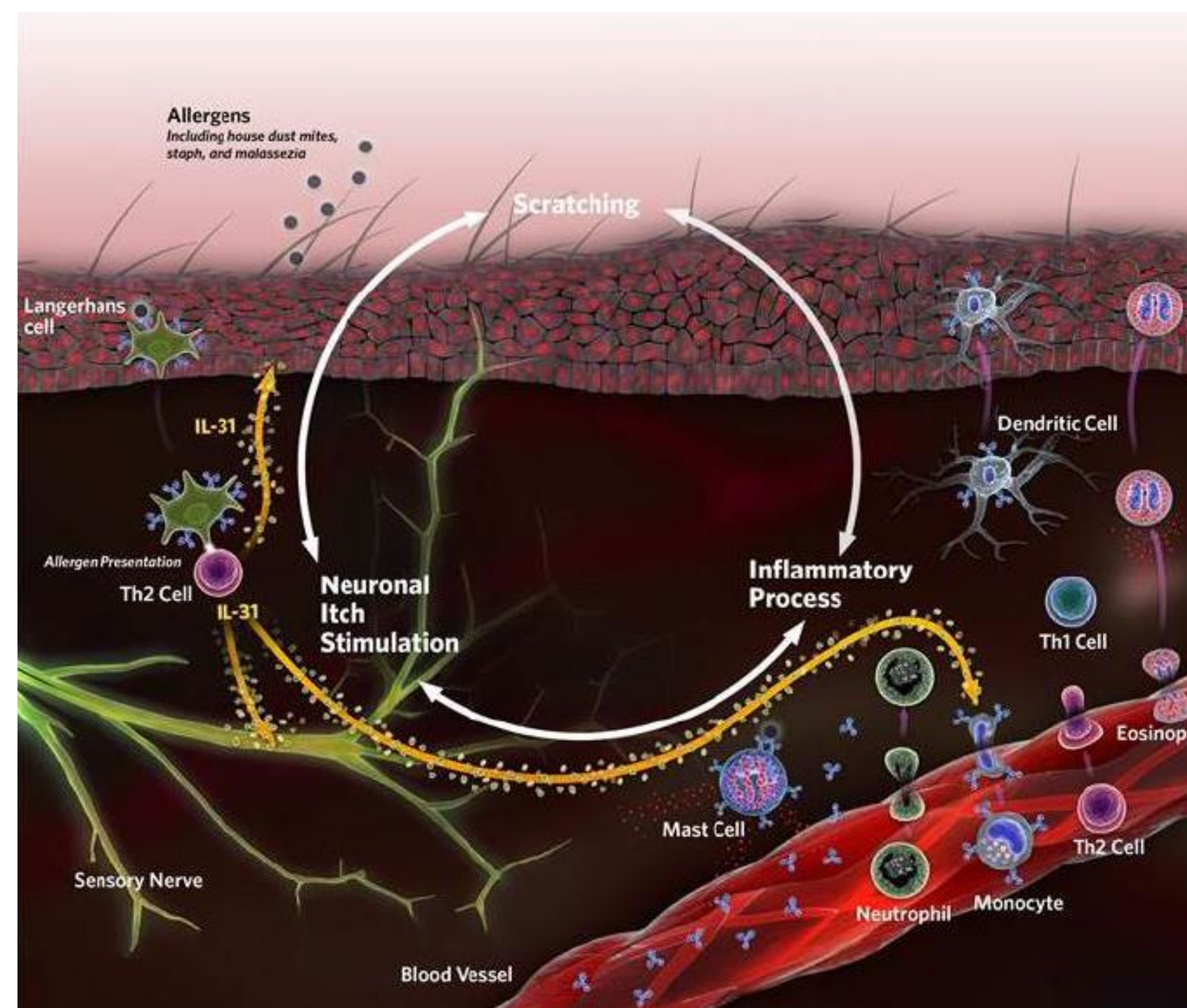
IL-31 levels in dogs with inflammatory and pruritic diseases

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1. Introduction

IL-31 is a cytokine that seems to be overexpressed in patients with atopic dermatitis (AD), an allergic disease characterised by an intense pruritus¹⁻⁴.

However, only 57% of atopic dogs show detectable levels of IL-31⁵.



(CAD Immunotherapy. Sep 2015. Zoetis)

Figure 1. Function and physiology of IL-31 in allergic processes.

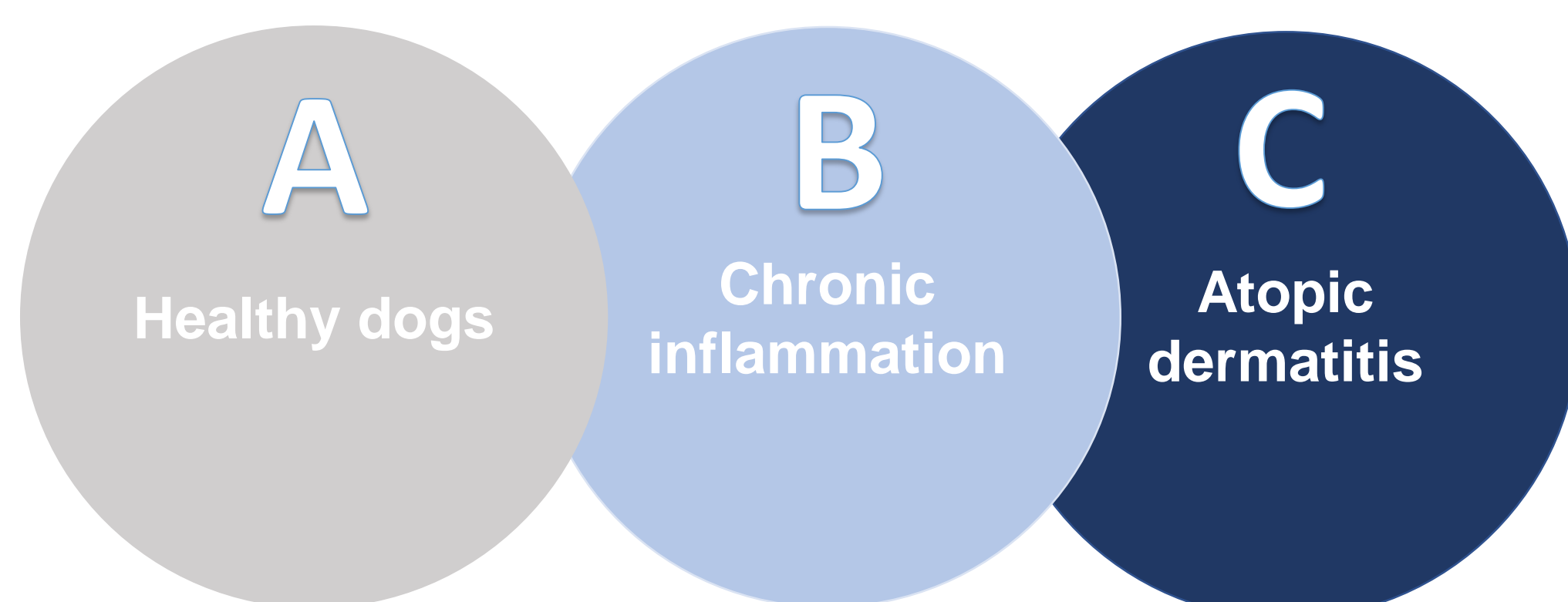
2. Objectives

To evaluate the IL-31 in dogs with AD or other inflammatory process without pruritus.

To determine if IL-31 increases in inflammatory processes or only in those that are accompanied by pruritus, such as AD.

3. Methods and materials

Animals: n = 14



Experimental protocol:



Determination of IL-31

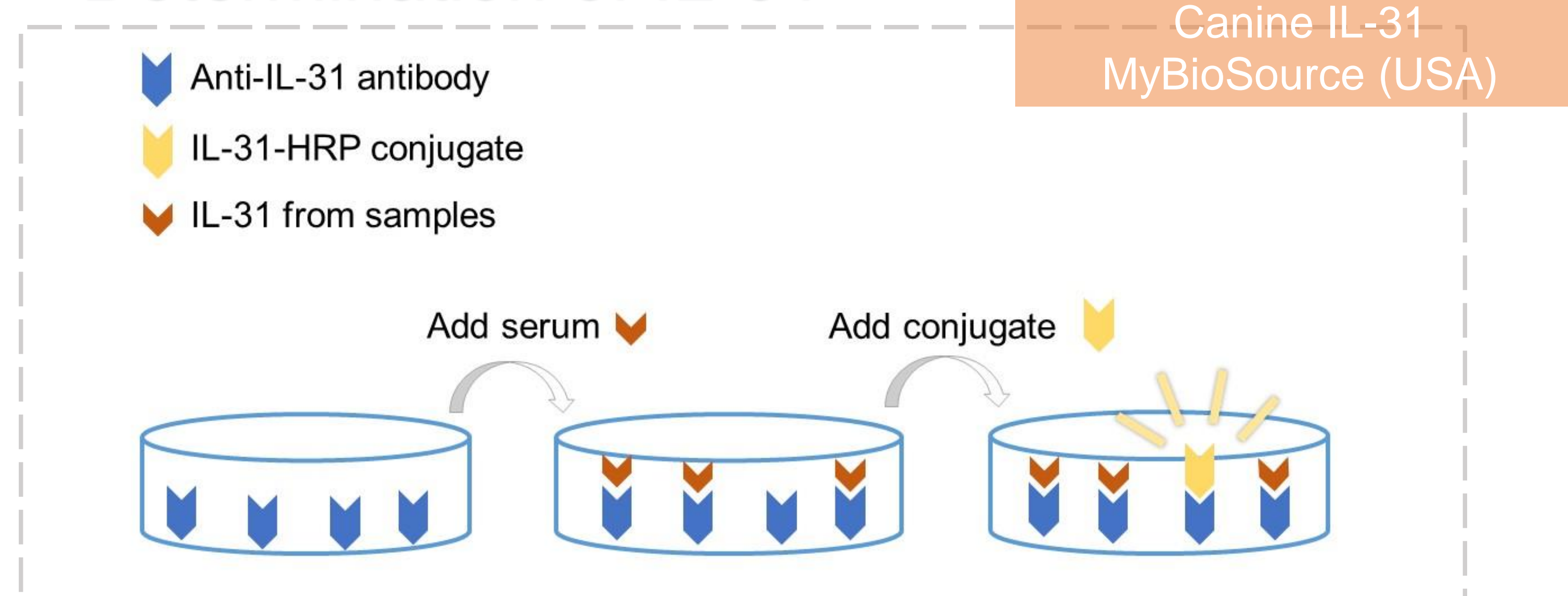


Figure 2. Competitive ELISA to determine IL-31.

5. Conclusions

No significant differences were observed in IL-31 levels in the three populations studied.

However, IL-31 tends to increase in dogs with SA and still more in dogs with chronic inflammatory disease without pruritus.

More studies and more animals need to be analysed to confirm these results.

4. Results

Table 1. Serum levels of IL-31 of the three different groups. It shows a high variability intragroup.

Serum levels of IL-31			
	Healthy dogs	Chronic inflammation dogs	Atopic dermatitis dogs
	IL-31 (pg/mL)	IL-31 (pg/mL)	IL-31 (pg/mL)
	221,3	2959,4	173,5
	192,3	906,9	109,9
	73,4	374,1	398,5
	238,1	1595,1	901,8
	346,7	349	107,4
	304,9	716,6	814,5
	271,4	719,5	852,1
	271,4	215,2	1073
	262,5	194,2	685,8
	199	248,2	539
	274,7	403,5	592
	438,3	259,1	316,8
	299,1	496,4	273,2
	258,4	420,8	294,3
Mean ± SEM	260,8 ± 22,1	704,1 ± 200,0	509,4 ± 84,8

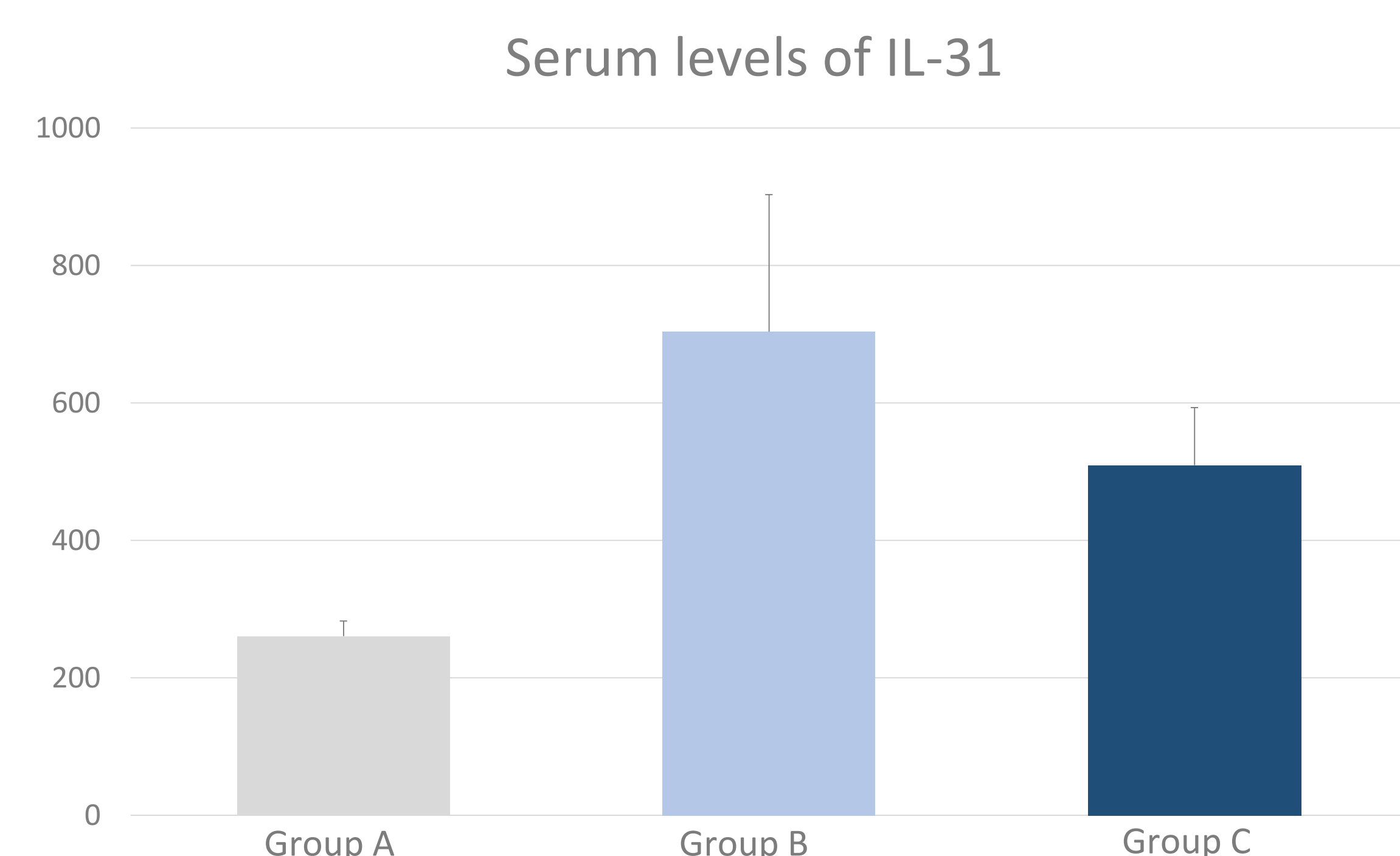


Figure 3. Means and SEM of IL-31 levels of the three populations studied

6. References

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2. McCandless EE, Rugg CA, Fici GJ, et al. 2014. Allergen-induced production of IL-31 by canine Th2 cells and identification of immune, skin, and neuronal target cells. *Vet Immunol Immunopathol*. 157(1):42–48.
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4. Saleem MD, Oussedik E, D'Amber V, et al. 2017. Interleukin-31 pathway and its role in atopic dermatitis: a systematic review. *J Dermatolog Treat*. 28(7):591–599.
5. Gonzales AJ, Humphrey WR, Messamore JE, et al. 2013. Interleukin-31: Its role in canine pruritus and naturally occurring canine atopic dermatitis. *Vet Dermatol*. 24(1).