CCDS SUMMARY – WHY ARE THEY RELEVANT?

- Allergen-specific IgE serological testing detects the level of IgE antibodies an individual animal has, in its blood, against each particular allergen.
- Allergen extracts used for serological allergy testing are predominantly protein but they have sugar residues, known as carbohydrate determinants, attached.
- An animal may have IgE antibodies which bind to the protein, the carbohydrate determinants, neither, or both; it is thought that in the majority of cases, the binding of IgE to carbohydrate determinants is not clinically relevant.[1,2]
- Many plants (and insects) have similar carbohydrate determinants attached, so if an animal has IgE antibodies to one which is common to many allergens, immunological cross-reactivity can occur (e.g., a run of positive results may be seen for all grasses). This is why they are called 'cross-reactive' carbohydrate determinants (CCDs).
- CCD blockers can be included within serological assays to prevent and remove any CCD binding IgE prior to detection. This reduces the likelihood of multi-allergen responses, which allows more appropriate allergen selection to be made for allergen specific immunotherapy.
- Following extensive research, Avacta Animal Health has developed its own unique CCD blocker. This is incorporated into to all of our canine and feline IgE environmental assays.

REFERENCES

1. Levy, B.J, DeBoer, D.J. "A preliminary study of serum IgE against cross-reactive carbohydrate determinants (CCD) in client-owned atopic dogs." (2018) Vet Dermatol: 29: 243-e90

2. Yokoi, H, Yoshitake, H, Matsumoto, Y, Kawada, M, Takato, Y, Shinagawa, K, Sakurai, H and Saito, K. "Involvement of cross-reactive carbohydrate determinants-specific IgE in pollen allergy testing." (2017) Asia Pacific Allergy 7:29-36