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MEDIA RELEASE

Purina research develops novel approach to neutralising cat allergens

A feline-friendly breakthrough in neutralising Fel d1, the major cat allergen

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Purina scientists have demonstrated a way to significantly reduce the active levels of the major cat allergen Fel d1 at its source in cats' saliva.

Taking advantage of natural allergen-antibody interactions, Purina researchers discovered how to safely neutralise Fel d1 in hair and dander by incorporating an egg product containing anti-Fel d1 antibodies into a cat's diet.

Through feeding, active Fel d1 levels are reduced in the home environment, while maintaining normal allergen production by the cat and without affecting its overall physiology. This innovative method can transform the way people manage cat allergens as it reduces exposure to the allergen, but not to the cat.

"These allergens have created a huge barrier to cat ownership and may limit the loving interactions between cat lovers and cats," says immunologist Dr Ebenezer Satyaraj, Director of Molecular Nutrition at Purina and lead investigator on the research. "Our discovery has the potential to transform how people manage cat allergens."

As many as one in five adults worldwide are sensitised to cat allergens. Avoiding cats has been a cornerstone of managing allergens to date, which can lead to cats having to be rehomed.

Contrary to a popular perception, there are no truly hypoallergenic cats. All cats produce Fel d1 – regardless of breed, age, hair length, hair colour, sex, or body weight. Up to 95 percent of reactions in cat allergen-sensitive people are caused by Fel d1.[1] Produced primarily in cats' salivary and sebaceous glands, Fel d1 is transferred to a cat's hair and skin during grooming, then dispersed in the environment via hair and dander (dried flakes of skin).[2,3]

David Thomas, Associate Professor at Massey University's School of Agriculture and Environment and Director of the largest cat colony in New Zealand, says physical contact is an important component of the human-cat relationship and allergies weaken that bond.

"Studies show that as many as one in five adults worldwide are sensitised to cat allergens[4] – in New Zealand that means that up to 1 million people suffer an allergic response and it is why allergy is often cited as a reason for relinquishment of an animal to shelters or a barrier to cat ownership or adoption," Associate Professor Thomas said.

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[1] Bonnet, B., Messaoudi, K., Jacomet, F., Michaud, E., Fauquert, J. L., Caillaud, D., & Evrard, B. (2018). An update on molecular cat allergens: Fel d 1 and what else? Chapter 1: Fel d1, the major cat allergen. *Allergy, Asthma and Clinical Immunology*, 14, pp. 14-23. doi: 10.1186/s13223-018-0239-8.

[2] Bartholome, K., Kissler, W., Baer, H., Kopietz Schulte, E., & Wahn, U. (1985). Where does cat allergen 1 come from? *Journal of Allergy and Clinical Immunology*,*76*, 503–506.

[3] Dabrowski, A., Van der Brempt, X., Soler, M., Seguret, N., Lucciani, P., Charpin, D., & Vervloet, D. (1990). Cat skin as an important source of Fel d1 allergen. *Journal of Allergy and Clinical Immunology, 86*, 462–465.

[4] Zahradnik, E., & Raulf, M. (2017). Respiratory Allergens from Furred Mammals: Environmental and Occupational Exposure. *Veterinary Sciences 4*, 38.

A response in people sensitised to Fel d1 occurs when the allergen comes into contact with the individual and then binds with specialised immune defense proteins in their body. In this groundbreaking research, spanning more than a decade, Purina scientists found that an anti-Fel d1 antibody (IgY) can block specific sites on Fel d1 produced in cats' saliva, thereby neutralising the allergen.

According to a Purina study, published in *Immunity, Inflammation and Disease,* when cats were fed a diet including this egg product with IgY, 97% showed decreased levels of active Fel d1 on the hair and dander. On average, there was a 47% reduction of active Fel d1 on cats' hair after three weeks of feeding the diet. Decreasing active Fel d1 on a cat's hair can reduce cat allergens shed into the environment on hair and dander. Reducing the allergen load in the environment has been shown to be beneficial to allergen-sensitive people.[5] This was validated in a recent environmentally-controlled study conducted by researchers at Washington University, St. Louis, Missouri.[6]

Associate Professor Thomas says he has seen results from the Purina Institute studies presented at a number of international conferences. "The initial idea was relatively simple, but the work has now resulted in an elegant solution to a significant problem for a large number of cat owners globally."

For more information about this research, and the Purina Institute, please visit: www.purinainstitute.com.

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About the Purina Institute
Serving as the global voice of Purina's science and its more than 500 scientists and pet care experts, the Purina Institute is responsible for sharing the latest scientific findings in companion animal nutrition, with the goal of putting nutrition at the forefront of pet health discussions.

About Purina
Nestlé Purina PetCare promotes responsible pet care, community involvement and the positive bond between people and their pets. A premiere global manufacturer of pet products, Nestlé Purina PetCare is part of Swiss-based Nestlé S.A., a global leader in nutrition, health and wellness.

5. Wickman, M. (2005). When allergies complicate allergies. *Allergy, 60* (Supplement 79), 14-18.

6. Wedner, J., Satyaraj, E., Gardner, C., Al-Hammadi, N., Sherrill, S., & Mantia, T. (2019, June). Pilot study to determine effect of feeding cat food made with egg product containing anti-Fel d1 antibodies to cats on human allergy symptoms. Presented at the the European Academy of Allergy and Clinical Immunology Congress, Lisbon, Portugal.