

Comparing Bacterial Communities on Skin of Healthy & Allergic Cats

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In the literature

Older CE, Diesel AB, Starks JM, Lawhon SD, Hoffmann AR. Characterization of staphylococcal communities on healthy and allergic feline skin. *Vet Dermatol.* 2021;32(1):61-e10.

FROM THE PAGE ...

Relatively little is known about the normal microbial populations on the skin of cats as compared with that of humans and dogs. In this study, researchers investigated the staphylococcal communities on the skin of healthy and allergic cats. Skin swabs were obtained from the ear canal and groin of 11 healthy cats and 10 allergic cats. Skin samples from allergic cats were free of skin lesions. DNA was extracted from the samples and sequenced using a region of the 16S rRNA gene. Predominant phyla found included Proteobacteria (average relative abundance 52.29%), Firmicutes (17.94%), Actinobacteria (13.99%), and Bacteroidetes (11.87%). Overall abundance of *Staphylococcus* spp was fairly low, with an average abundance of 4.34% in healthy cats and 3.61% in allergic cats. Samples with staphylococcal sequences often had multiple different species, with an average of 2 species per sample. *S epidermidis* and *S pseudintermedius* were most common in samples from healthy cats, and *S capitis* and *S felis* were most common in samples from allergic cats. *S pseudintermedius* was only identified in 4 sequences from allergic cats. No significant difference in microbial diversity was found between healthy and allergic cats.

... TO YOUR PATIENTS

Key pearls to put into practice:

1 Diverse populations of *Staphylococcus* spp exist in cats. This differs from dogs, in which *S pseudintermedius* is the predominant species found in both healthy and allergic patients. This finding provides evidence for different clinical considerations in management of dogs and cats.

2 Differences in flora detected between healthy and allergic patients may represent targets for therapeutic intervention. In this study, significant differences were not found in the cutaneous microbiota of healthy and allergic cats; however, because the study sampled nonlesional skin of allergic cats, it is possible that lesional skin of allergic cats may have different microbiota.

3 Although statistical significance was not achieved, some differences were observed between healthy and allergic feline skin. *S epidermidis* was more common on the skin of healthy cats as compared with allergic cats. This is also found in humans, in which *S epidermidis* is more common on healthy human skin and can have a protective role in skin health.¹ Further research is needed to determine if a similar protective role can be documented in cats.

Reference

1. Gallo RL, Nakatsuji T. Microbial symbiosis with the innate immune defense system of the skin. *J Invest Dermatol.* 2011;131(10):1974-1980.