

ALEX²® Case Study No. 8

Ayleen, 16 years, from Shanghai, China



Clinical history

Ayleen has suffered from atopic dermatitis since the age of one, which has been successfully treated. When her immune system was weakened by a viral disease, she would get dry, itchy patches of skin.

She has suffered from blemished skin since she was 13. She has small itchy pustules on her chin, neck, and back. She has already tried many different washing solutions, peelings, and creams, unfortunately without success. Her dermatologist diagnosed her with hormonal acne and prescribed her high doses of vitamin C, which works well against inflammation and is effective in the fight against blemished skin and acne. However, Ayleen's skin condition did not improve.

Family history

Her mother is allergic to cats.

Present situation (2021)

Ayleen still suffers a lot because of her blemished skin. Therefore, she consults a dermatologist who orders an ALEX²® allergy test.

ALEX²® Results

Allergen Source	Allergen	Biochemical destination	IgE Level (kUA/L)
	tlgE		105,27
Malassezia sympodialis	Mala s 5	Unknown	36,93
Malassezia sympodialis	Mala s 6	Cyclophilin	4,61
Malassezia sympodialis	Mala s 11	Mn Superoxid-Dismutase	35,00
Aspergillus fumigatus	Asp f 6	Mn Superoxid-Dismutase	18,73

Interpretation

- Sensitisation to several molecular allergens of Malassezia sympodialis was detected.

- Mala s 5 is a member of the redoxin allergen family. The degree of cross-reactivity with other members of this allergen family (in moulds and yeasts) is moderate.
- Mala s 6 is a member of the cyclophilin allergen family. The degree of cross-reactivity with other members of this family is high.
- Mala s 11 is a member of the Mn-superoxide dismutase allergen family. The degree of cross-reactivity with other members of this allergen family is high. Mala s 11 is able to induce autoreactive T cells. The importance of this allergen in atopic dermatitis (AD) was supported by a strong correlation between the severity of AD and a sensitisation to Mala s 11.
- Sensitisation to spores of *Aspergillus fumigatus* was found. Allergic symptoms associated with *A. fumigatus* range from allergic rhino-conjunctivitis to allergic asthma.

Summary

The results of the ALEX²® allergy test, in conjunction with the medical history, made it clear that the patient suffers from a *Malassezia* allergy. *Malassezia sympodialis* is a yeast fungus commonly found in patients with atopic dermatitis. Especially seborrhoeic skin areas (e.g., head, neck) are preferred habitats. Consistent skin care is the basis of AD therapy. In case of clinically manifest skin inflammation in AD episodes, anti-inflammatory treatment is necessary. AD patients may benefit from antifungal therapy.

Due to the strong cross-reactivity of Mn-superoxide dismutases, sensitisation to *Aspergillus fumigatus* could also be detected. However, as the patient has no respiratory symptoms, therapy does not have to be considered.

