

# NEW HORIZONS — ALLERGY —

## *IgE antibodies to Staphylococcal enterotoxins (SEs) indicates superantigen activity and a more severe course of allergic disease*

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### Clinical background

Gram-positive *Staphylococcus aureus* bacteria have the possibility to release enterotoxins which have superantigen\* activity and which effectively modify the functions of T- and B-cells, eosinophils, and other inflammatory and structural cells. The enterotoxin stimulation may lead to a TH2-polarized eosinophilic inflammation as well as a polyclonal IgE production, aggravating allergic disease in the skin and in the upper and lower respiratory tract.

IgE antibodies to enterotoxins have been found in atopic eczema, in allergic rhinitis and nasal polyp patients, in aspirin-sensitive patients, in severe asthma and COPD sufferers as well as in early childhood wheezers. In principle the presence of these IgE antibodies indicate an amplification of the inflammatory process on the dermal and mucosal level, and thus a more severe course of disease, often linked to the clinical expression of aspirin sensitivity and/or steroid insensitivity.

SE-specific IgE antibodies are currently the main diagnostic tools in these conditions. The awareness of the impact of superantigens on a given chronic disease is of great value, and patients with chronic, severe eczema, asthma or rhinosinusitis/nasal polyps and IgE antibodies to SEs may improve by antibiotic treatment.

\* Certain species of infectious microorganisms produce powerful, immunostimulatory and disease-causing toxins called superantigens, so called because of their ability to polyclonally activate large fractions of the T- and B-cell populations at picomolar concentrations.

### Suggested diagnostic routines

- Test for IgE antibodies to Staphylococcal Enterotoxins in peripheral blood.
- The presence of IgE ab to SE indicates a present or previous stimulation of the local immune system by the respective enterotoxin.
- Furthermore, a polyclonal IgE antibody response pattern, high total IgE level and increased ECP value would indicate current activity of the superantigens and should especially help to differentiate from atopic disease, which also might co- or preexist.

Reference: New Horizons Number 2, 2007

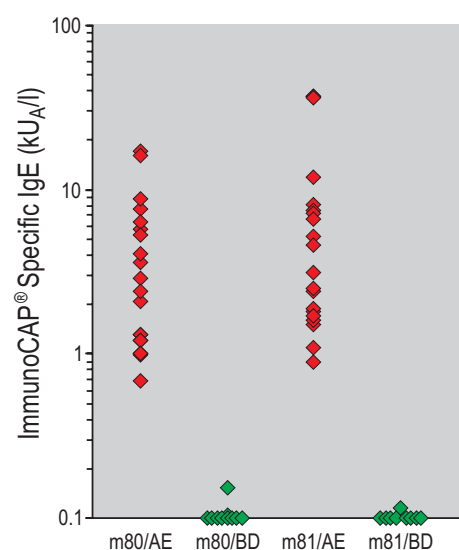


Figure. IgE to Staphylococcal enterotoxins A (m80) and B (m81) in selected patients with Atopic Eczema (AE) and in Blood Donors (BD).

## Product List

### ImmunoCAP® for IgE antibody determination of Staphylococcal superantigens

Product	Code	Size	Art. No.
Staphylococcal enterotoxin A*	m80	10	14-4889-01
Staphylococcal enterotoxin B	m81	10	14-4890-01
Staphylococcal enterotoxin C*	m223	10	14-5298-01
Staphylococcal enterotoxin D	m224	10	14-5299-01
Staphylococcal enterotoxin TSST*	m226	10	14-5301-01

\* Most important Staphylococcal enterotoxins suggested by Professor C. Bachert, Gent, Belgium

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