We want to be the leader in detecting the root causes of allergies and curing them instead of addressing the symptoms only.

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Himself being allergic
Working since 35 years in that field
Founder of Kalixan Ltd.
Author of a new book about allergy
Allergies
Why interest in allergies and enzymes?

Francesca Seegy-Bohner  
Allergic

Thomas Bohner  
Allergic

Alessandro 2004  
Allergy risk ↑

Enrico 2006  
Allergy risk ↑
Allergy definition old

An allergy is a chronic condition involving an abnormal reaction to an ordinarily harmless substance called an allergen. Allergens can include aeroallergens:

- dust mite, mold,
- tree weed, grass pollen,

as well as food allergens:
- milk, egg,
- wheat,
- nut or
- fish proteins.

If you have an allergy, your immune system views the allergen as an invader and a chain reaction is initiated. White blood cells of the immune system produce IgE antibodies, which attach themselves to special cells called mast cells, causing a release of potent chemicals such as histamine.
Allergies

Allergy, the illness of the industrial world No. 1 (20% have increased IgE-levels)

Atopic dermatitis (neurodermitis) has increased from 2% up to 10%

Neurodermitis as a „Boom“ for babies and children (about 15%

Allergies against perfumes with 7% of the population

• Babies, children and teens up to 13% ↑

Allergic asthma has increased dramatically (house dust mites)

Actual scientific examinations show that enzymes play a major role in developing allergies and sensibilities. (Budnik 2016)
Allergen «Quo Vadis» - How an allergy occur?

- Allergen

- Allergen must have contact to the immune system
  - With replication

- Different barriers have to be overcome
  - Hair
  - Glycocalyx
  - Cellmembrane
  - Tight-Junctions

- Result: Sensibilisation / Allergy
The Glycocalyx is inherited and has about 5 different types
How can the castle be destroyed?

- Mechanical destruction
  (eg cut => cells are destroyed)

- Chemical / physical. injury
  => cells are destroyed

- Insect sting (eg bee => Immune response strong)

- «Molecular injury» (eg enzymes => Immune response strong, no alarme signal)

=> Allergy is more an injury than an immune problem!
«Killer»
Enzymes
Introduction functions of enzymes

Enzymes are proteins, that are able to katalyse a chemical reaction.

Natural enzymes have an important biological role

- digestion
- metabolisation (building up, disruption and changing of molecules/structures)
- defence
Cells protect themselves with chains of lipids, sugar and proteins like a net (Glykokalyx) against allergens and foreign particles [name Kalix(S)an = healthy Kalix]

Enzyme can destroy this natural network

Allergens can enter the body and have contact with the immune system

Immune diseases and allergies can be developed
Cells protect themselves with chains of lipids, sugar and proteins like a net (Glykokalyx) against allergens and foreign particles [name Kalix(S)an = healthy Kalix] Enzyme can destroy this natural network Allergens can enter the body and have contact with the immune system Immune diseases and allergies can be developed
Some proteases can destroy the IgE-Receptor

This IgE-Rezeptor is organizing the IgE-Production through a Feed-Back Mechanism

Is this not working, the cell produces constantly IgE => the immune system is „out of control“

The high IgE-level results in typical symptoms with the worst case of an anaphylactic shock

Perhaps invaded proteases can cleave other important receptors and thus causing other (chronic) illnesses like diabetes?

! But the proteases have to enter the protection barrier

Enzymes – The good, the bad and the ugly

- Mite faeces (Textiles, bed)
- Pollen (gras, trees)
- Fungal (bathrooms, plants, bio waste)
- Animal saliva (cat)
- Washing liquids (sensitives too)
- food (!!! All areas)

- Bacterials
- Insect stings (PLA)
Enzymes – The bad and the ugly

Body Surface

Fungal Enzymes

Animal Enzymes

Plants

Enzymes

Food

Enzymes

Enzymes

Beverage

Detergent
Toxikology

«Normal» toxic substances:

Suicide molecules: one molecule interacts with an enzyme, receptor or other important structures

Enzyme:

One enzyme acts as a katalysator, which is not inactivated after action. Enzymes can act between 1000 and 100000 working steps per seconds, thus the destruction potential is 1000 bis 100000 times stronger per second than «normal» toxic substances.

Toxikology in this case is time and not only amount depending. With an estimated period of action inside the body of 5 min. means that an enzyme is at least 300´000 times more toxic than the same amount of a «normal» toxic substance.
Enzyme (Literature)

Destruction of skin barrier

- Der p 1 facilitates transepithelial allergen delivery by disruption of tight junctions.
- Reduction of skin barrier function by proteolytic activity of a recombinant house dust mite major allergen Der f 1.
- The proteolytic activity of the major dust mite allergen Der p 1 enhances the IgE antibody response to a bystander antigen.
- Recombinant Der p 1 and Der f 1 with in vitro enzymatic activity to cleave human CD23, CD25 and alpha1-antitrypsin, and in vivo IgE-elicitng activity in mice.

Enhancing the immune response

- A major house dust mite allergen disrupts the immunoglobulin E network by selectively cleaving CD23: innate protection by antiproteases.
- The cysteine protease activity of the major dust mite allergen Der p 1 selectively enhances the immunoglobulin E antibody response.
- Biologically active recombinant forms of a major house dust mite group 1 allergen Der f 1 with full activities of both cysteine protease and IgE binding.
- Crucial commitment of proteolytic activity of a purified recombinant major house dust mite allergen Der p1 to sensitization toward IgE and IgG responses.
- The proteolytic activity of the major dust mite allergen Der p 1 conditions dendritic cells to produce less interleukin-12: allergen-induced Th2 bias determined at the dendritic cell level.
- Proteolytic activity of the house dust mite allergen Der p 1 enhances allergenicity in a mouse inhalation model.
- Der p 1, a major allergen of the house dust mite, proteolytically cleaves the low-affinity receptor for human IgE (CD23).
- The isolation and characterization of a novel collagenolytic serine protease allergen (Der p 9) from the dust mite Dermatophagoides pteronyssinus.
- Proteolytic cleavage of CD25, the alpha subunit of the human T cell interleukin 2 receptor, by Der p 1, a major mite allergen with cysteine protease activity.
- The house dust mite allergen Der p1 catalytically inactivates alpha 1-antitrypsin by specific reactive centre loop cleavage: a mechanism that promotes airway inflammation and asthma.
Food
Food

- Bakery products
- Starch and Sugar
- Milk and cheese products
- Oil and Fat
- Wine and fruit juice
- Beer and alcohol
- Fish, meat and sausage
Allergy therapy

«Enzym free» life style => allergy free status

Taking once the wrong enzyme => back to the start

Skin problems take 5 to 21 days

Allergic asthma takes 14 to 28 days

Self experiments

Own product development

Selfmade bread, saucage, cheese (!yeast)

Washing detergent

With money-back-guaranty in case the symptoms are not improving
Aims and wishes

University:
- Research of the risk for human beings related to enzymes
- Test systems for enzymes

Law:
- Declaration duty for enzymes (Sequence, production strain)
- Especially when used as production aid

Medical system:
- Evaluating the risk of allergy tests (Prick-Test)
- Better scientific education for medical doctors (especially allergologists/immunologists) and food experts
An allergy is a chronic condition involving a destruction of the body surface followed by entering of either environmental substances or aggressive enzymes that can further destroy important parts of the inner side of the body.

If you have an allergy, your immune system works perfect and detects allergens that have invaded the body. The following chain reaction is initiated and important to inform the body.
Bohner’s nightmares or reality?

Sweetheart you had only a nightmare

Enzymes! Everywhere Enzymes!!!
Thank you very much for your attention!

For any questions, please feel free to contact me.

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