

Diagnosis and Treatment of Histamine Intolerance

M. Pfisterer¹, C. Wennemer¹, K. Fiedler¹, A. Missbichler²

[1] Privatpraxis Dr. Pfisterer, Heilbronn, D

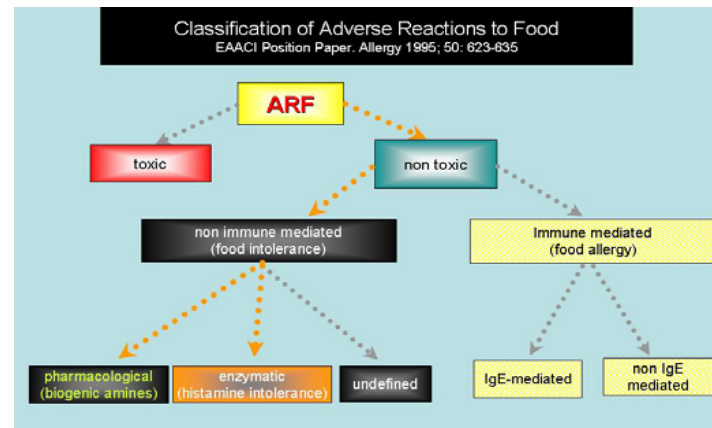
[2] Sciotec Diagnostic Technologies, Wien

Introduction:

Histamine Intolerance (HIT) or Food Intolerance results from an impairment of ingested histamine and degradation capacity in the intestine. Up to 25% of our population suffer from various allergy-like intolerance reactions after consumption of certain types of food. Main reactions are gastrointestinal disorders, asthma, skin irritation and headache.

Correct diagnosis and therapy of HIT up to now was restricted to good anamnesis and exclusion diet.

A generally accepted classification scheme of adverse reactions to foodstuff was formulated by the EAACI in 1995:

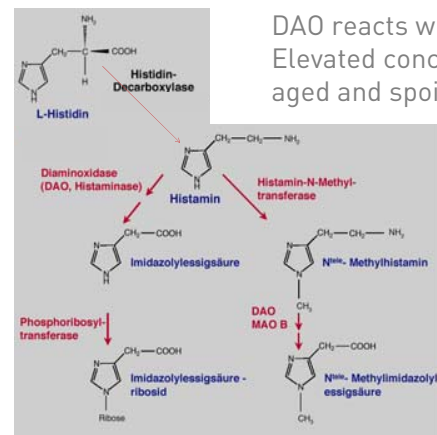


The Trigger: Histamine

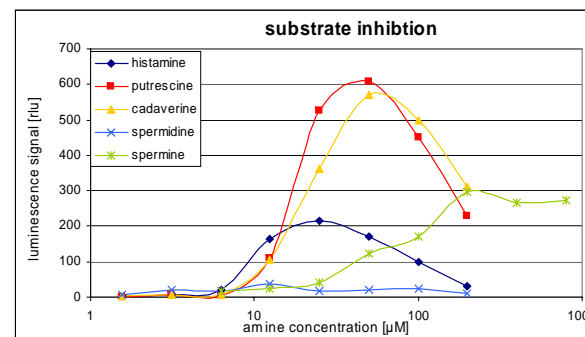
Histamine is an important second messenger for a huge number of reactions in the body. It is well known as main transmitter of allergic and pseudo-allergic reactions.

Natural Counterpart: DAO

Diamine oxidase (DAO) EC 1.4.3.6
DAO is responsible for the degradation of biogenic amines ingested with food. DAO acts in the intestine to protect the body from excess of histamine

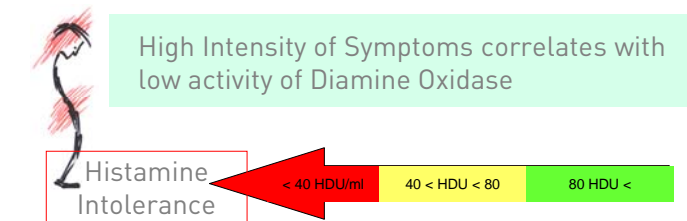
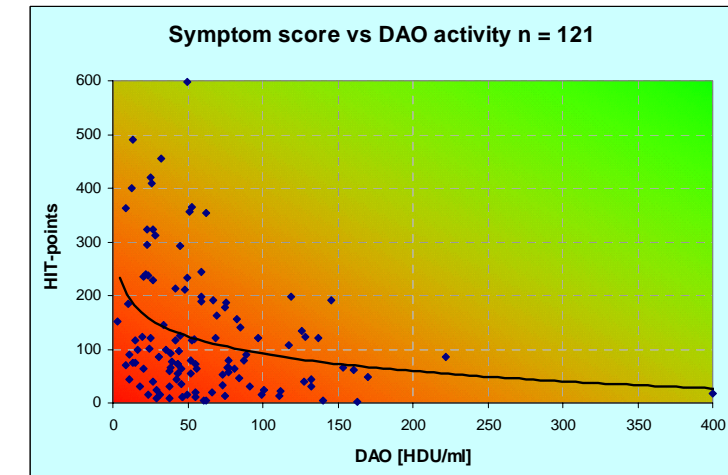
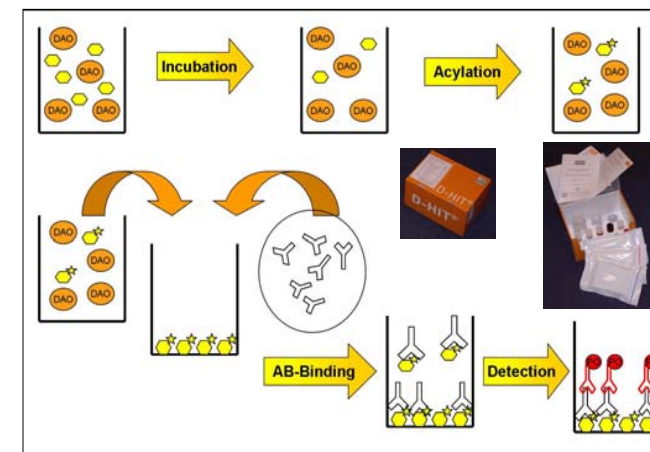


As all these substances compete for the active site of the enzyme, they are degraded according to the respective affinity constant. As Putrescine and Cadaverine are degraded quicker than Histamine this is taken up by the body in case of reduced activity of the enzyme.



Final step: Activity of Diamine oxidase

Histamine-degrading capacity of the patient is determined by measuring DAO activity in serum or plasma. It is accepted that DAO activity in blood represents the capability of the body to degrade ingested histamine. Activity of the enzyme is given in HDU (Histamine Degrading Units).

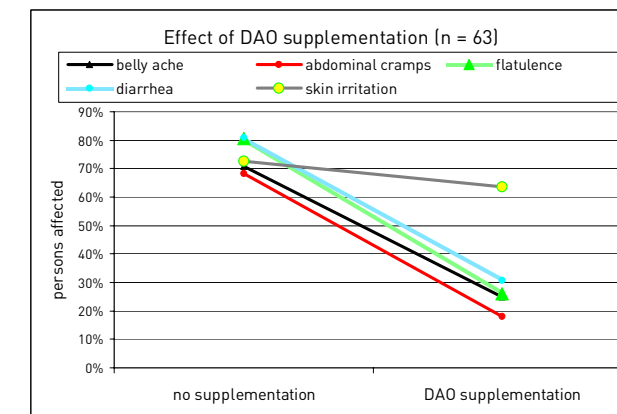


Therapy: Histamine free diet

A strict avoidance of food containing histamine normally reduces symptoms of HIT within two weeks. A high portion of constancy is requested from the patients, as they have to abstain from many foodstuff like tomatoes, cheese, tuna, chocolate, red wine, which are very common in everyday food.

Supplementation of DAO

Sciotec made Diamine Oxidase available as a dietary ingredient. The enzyme is encapsulated in acid-resistant pellets that are packed in standard gelatin capsules. This patented formulation ensures the release of highly active enzyme in the small intestine, where it supports the degradation of histamine. In an observation study with more than 60 patients we could show that only 1 capsule per meal leads to a significant relief of the main symptoms.



	frequency		
	no DAO	with DAO	
intestinal frequencies (mean values)	none	1,1%	26,8%
belly ache, belly spasm, flatulence, diarrhea	seldom	23,8%	48,3%
	sometimes	48,3%	18,4%
	frequently	26,8%	6,6%

Diagnosis: A multi-step-concept

To ensure a highly efficient and reproducible anamnesis by the medical doctor we developed a questionnaire for the primary diagnosis of histamine intolerance.

First step: Symptoms

the main symptoms are documented and weighted:

- ⊗ Irritation of eyes ⊗ Nausea ⊗ Abdominal cramping ⊗ Bellyache ⊗ Flatulence ⊗ Diarrhea
- ⊗ Skin rash ⊗ Itching ⊗ Headache ⊗ Fatigue ⊗ Dizziness ⊗ Occlusion

Next step: Intolerances to food

- ⊗ Sparkling wine ⊗ Red Wine ⊗ other alcoholic beverages ⊗ Fish
- ⊗ Aged Cheese ⊗ Fermented Sausages ⊗ Tomatoes ⊗ Citric Fruits

All results are quantified in respect to intensity and frequency of the symptoms, giving an individual amount of histamine intolerance (HIT) points. In case of known intolerance to fructose, lactose or gluten HIT points are reduced accordingly.

Conclusion:

Sciotec successfully has established a new diagnostic tool to strengthen clinical proof of histamine intolerance. This innovative test system adds an important instrument to the diagnostic field.

As a consequence, to support the therapy, the enzyme is available as dietary food to improve quality of life of people suffering from HIT. For the first time the proprietary formulation supports histamine degradation using an biologically active enzyme of natural origin.

References:

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Patents:

- AT 411688 AT 502089
- AT 502850 AT 503070
- PCT/EP2005/053234 (pending)