



# DAO AND HISTAMINE MANAGEMENT

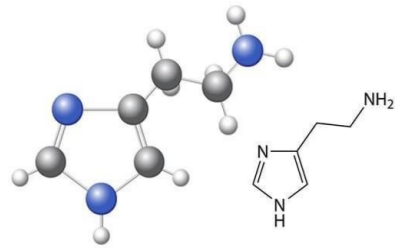


THE LEADER IN DAO DEFICIENCY

# HISTAMINE - DAO

16%

of the population has a **DAO deficiency**



**Endogenous histamine** is an essential molecule vital for human functioning. Conversely, exogenous or **dietary histamine** is naturally present in several foods and has no vital function known.

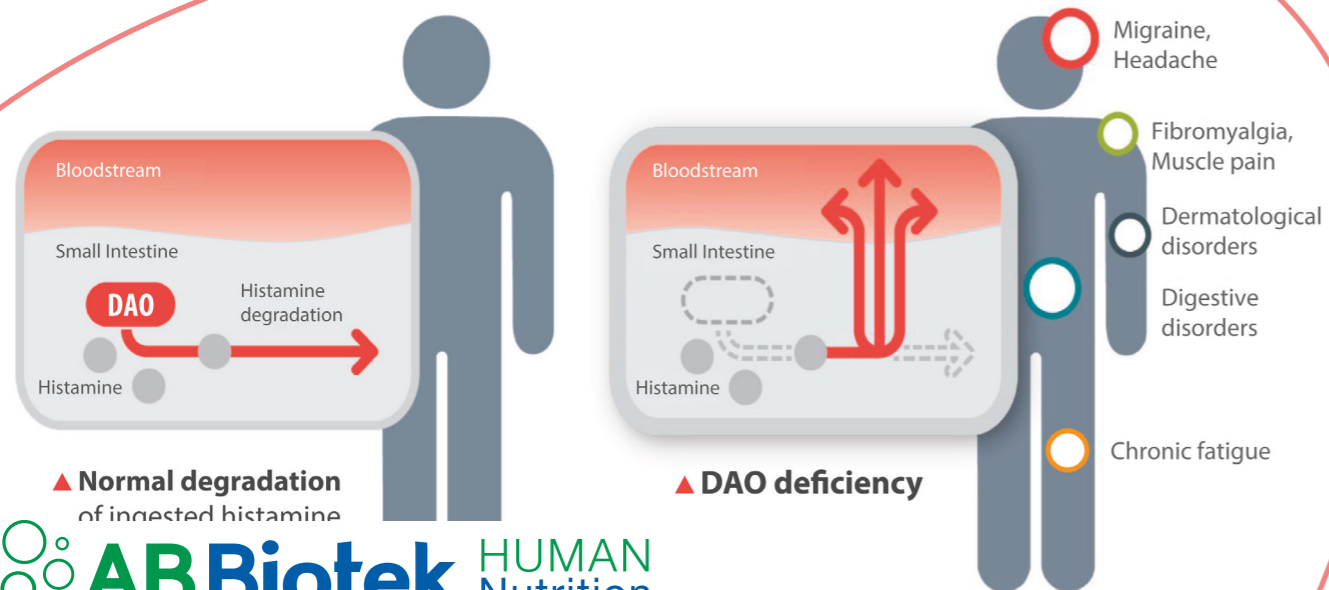
Normally, the intake of histamine contained in food does not cause any issues since it is quickly metabolized by the diamine oxidase (DAO) enzyme in the gut.

**DAO** is the enzyme responsible for the metabolism of ingested histamine. It is mainly located in the intestinal lumen – or the opening of the bowels – where it degrades dietary histamine.

## WHAT IS DAO DEFICIENCY?

**DAO deficiency** refers to a **metabolic disorder** where there is an imbalance between ingested histamine and the enzyme capacity to metabolize it. When histamine is not being properly degraded in the intestinal lumen, it is absorbed through the epithelium causing its accumulation in the blood and triggering several symptoms (i.e., migraine, intestinal and skin disorders, fibromyalgia, ADHD & more). Depending on DAO activity levels, some patients may have one or more symptoms.

Taking an additional **supplementation of DAO enzyme** before each meal increases the amount of DAO in the gut, therefore boosting **histamine degradation** and overcoming the disabled metabolic condition.

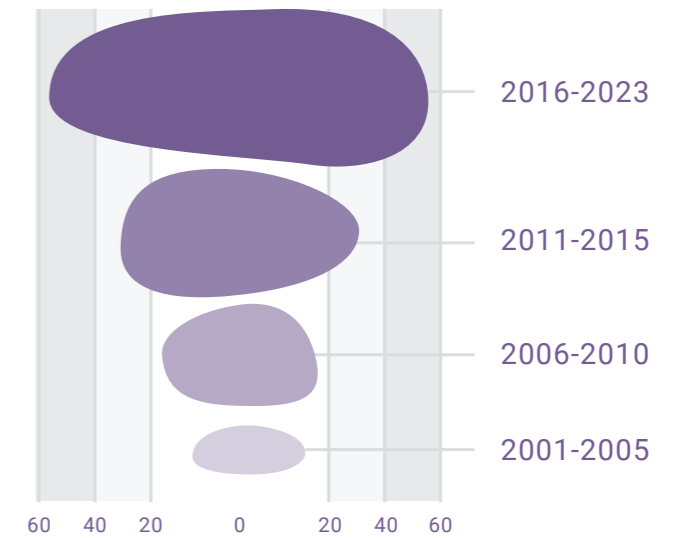


# 16 YEARS OF R&D AND IP GENERATION

Since 2007, DR Healthcare has been working closely with multiple universities, organizations and societies, generating scientific evidence and contributing to the knowledge of histamine intolerance caused by DAO deficiency. Our primary aim is to address histamine intolerance-associated metabolic disorders such as migraine, irritable bowel and other digestive disorders, atopy, fibromyalgia, ADHD and more through the marketing of new dietary products with outstanding therapeutic potential.

### SCIENTIFIC EVIDENCE

Has come to light only in the past 10 years!



In recent years, scientific evidence regarding **DAO deficiency** has **continued to grow**, both in prevalence and in both clinical and genetic aspects.

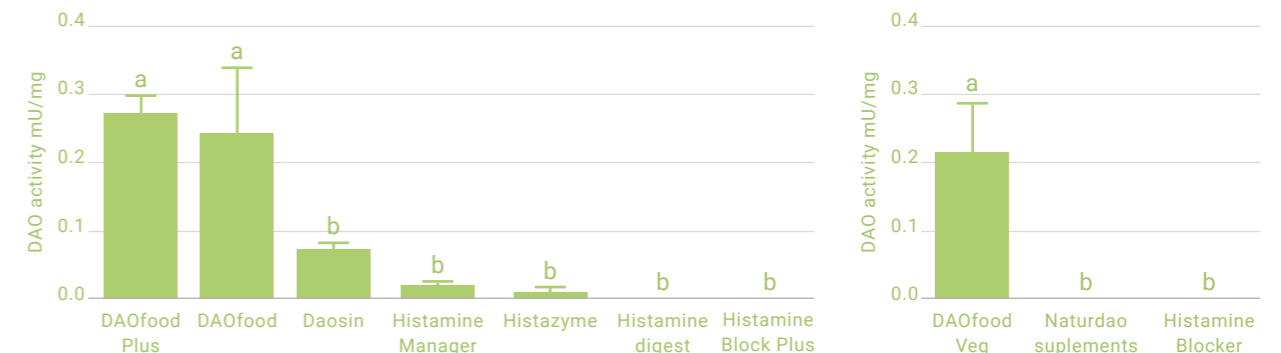
PubMed search engine & Medline database (Dec 24th, 2022)  
Keywords: 'histamine intolerance' & 'DAO Deficiency'



**STRONG IP POSITION**  
DR HEALTHCARE HAS 100+ IP PATENTS ACROSS THE GLOBE

## AN OUTSTANDING DAO ENZYME

As a result of continuous improvement in both enzyme extraction and purification processes, our DAO active ingredient and finished products are **the most efficient**, thus having higher enzymatic activity than products offered by our competition.



A comparison of over-the-counter Diamine oxidase products. Technological Centre EURECAT (2023)

DR Healthcare offers DAO active dietary ingredient both from animal and vegetal origin as well as customized solutions to address complex medical needs in diverse patient populations, either with branding or not.

**adiDAO**  
Active dietary ingredient from animal origin.



**adiDAO Veg**  
Active dietary ingredient from vegetal origin.

**Advanced galenic solutions in bulk:** tailored solutions to the customer need:

- 📦 Tablets
- 📦 Mini-tablets
- 📦 Capsules and microcapsules (ideal for functional foods)

**DAOfood** — **DAOfood Veg**



For the dietary management of **DAO deficiency**.

**DAOfoodPlus** — **DAOfoodPlus Veg**



For the dietary management of **digestive disorders** caused by DAO deficiency.

**DAOhead**



For the dietary management of **migraine** caused by DAO deficiency.

**fibroDAO**



For the dietary management of **fibromyalgia** caused by DAO deficiency.

**DAOkids**



For the dietary management of **ADHD** in **pediatric patients** caused by DAO deficiency.