

# PROTEIN HYDROLYSATES FOR INFANT AND MEDICAL NUTRITION



**PERFECT NUTRITION**

**PEVESA**   
b i o t e c h



## Introduction:

PEVESA's protein hydrolysates are applied in Baby Food, Sports Nutrition, Weight Management, Clinical & Senior Nutrition meeting the EU, FDA and ISO 22.000 regulations.

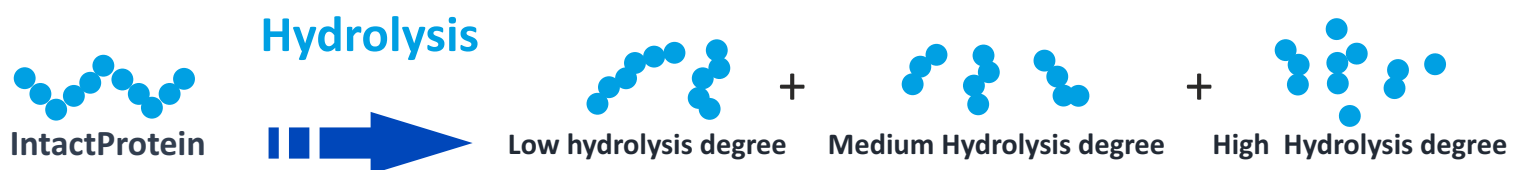
Thanks to their proprietary technology, protein hydrolysates, protein concentrates, protein isolates and essential amino acids are obtained and cleaned in a natural enzymatic way, which makes them suitable for human, even infant nutrition with highest standards in quality.

Strict quality control carried out not only on the production process but as well on the raw materials used for production, fast adaptations on new regulations and the possibility to control heavy metals and contaminants level explain the interest in those products as well as the international success and partnerships with important market players, which understand the importance of current nutritional trends related to lactose free, Gluten free, Allergen free and vegan products.

## Protein hydrolysates definition

Protein hydrolysate is a predigested intact protein obtained through an enzymatic treatment that simulates gastrointestinal digestion process. Intact molecules are cut into peptides and free amino acids that are easily absorbed.

The degree of hydrolysis is the percentage of peptide bonds that are broken during hydrolysis process. Pevesa Biotech has developed an exhaustive hydrolyzation procedure to achieve a controlled weight distribution for each application in the nutrition and wellness industry, from babies to ancient.

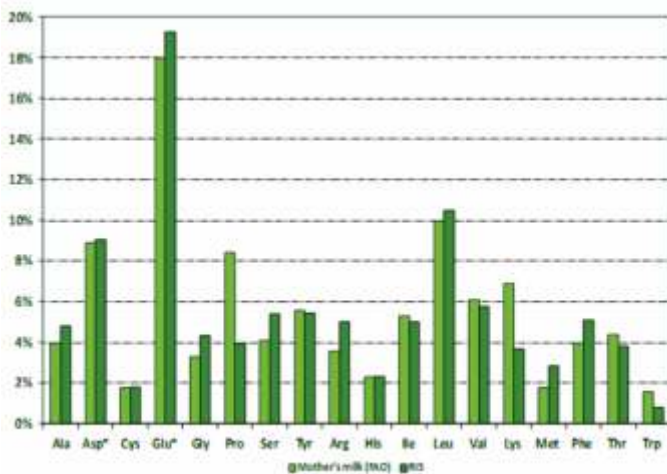


## More important features

There are two major benefits of hydrolyzed proteins: Hypo allergenicity and digestibility. Breastfeeding provides the best nutrition for babies, but for many different reasons it's not always possible for all mums to breastfeed. Pevesa Biotech has developed a range of rice protein hydrolysates for infant milk formulas: comfort and hypoallergenic. The main advantages of this protein source are:

- High comfort digestibility
- Amino acid profile similar to mother milk
- Hypoallergenic
- Help soothe the symptoms of colic and constipation
- High tolerance
- Gluten free
- Lactose free

Rice is well known for its hypo allergenicity and Protein Hydrolysates are less allergenic than its original protein. Rice hydrolysates are therefore, the most hypo-allergenic protein sources to be used. Rice Protein Hydrolysates are an excellent choice in special baby food formulas due to their high quality amino acid profile (see next picture), hypo allergenicity and matrix compatibility.



**HYDRORICE®**

## Allergy management

The main principle in management of MPA is to avoid allergens while maintaining a balanced, nutritious diet for infants and mothers. Although it is difficult, breastfeeding can be continued if allergens are avoided. For CMPA, a breastfeeding mother must sequentially eliminate all cow's milk protein, then all bovine protein (milk and meat), and occasionally other protein sources such as soy [1].

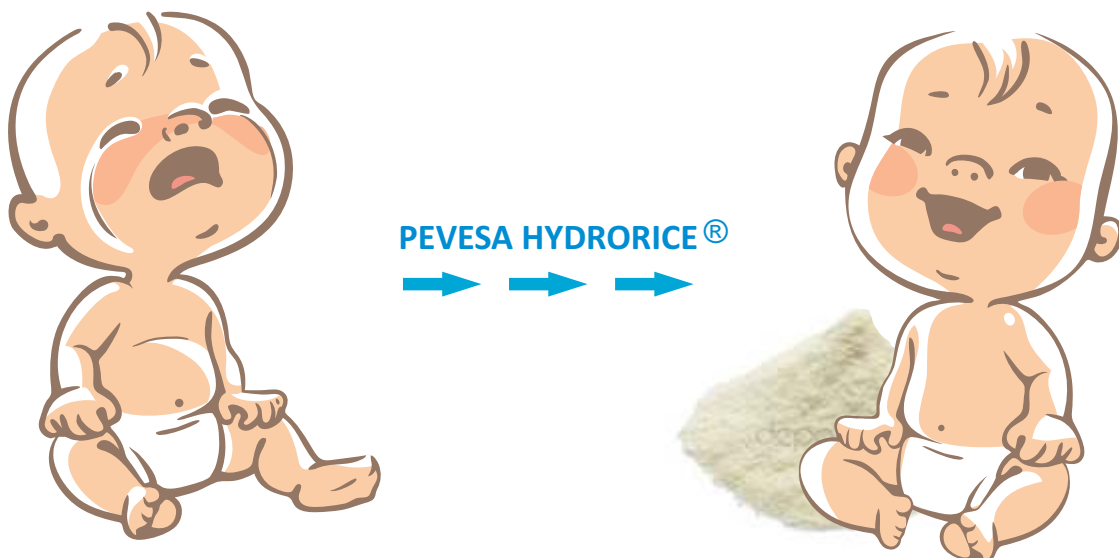
For formula-fed infants, current options include specific allergen avoidance, extensively hydrolyzed protein formulas (EHFs), and amino acid-based formulas (AAFs) [1].

There are two principal ways to avoid infant milk allergy in babies:

- Use of a hypoallergenic raw material.
- Extensive protein hydrolysis.

Pevesa Biotech HydroRice® RHS+ (NB115) is an extensive rice protein hydrolysate where almost epitopes\* have been destroyed reduce significantly potential allergens. It is the best solution for babies with allergic problems because combines two ways of allergic management.

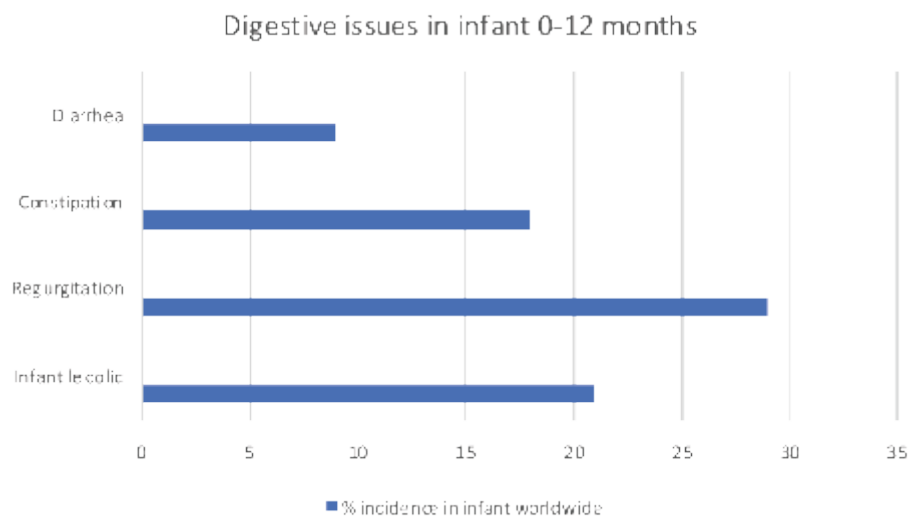
\*An Epitope, also called antigenic determinant, portion of a foreign protein, or antigen, that is capable of stimulating an immune response [2]. The epitopes must be destroyed or reduced through protein hydrolysis.



## Digestive comfort.

A large part of infants from 0-12 months suffer from gastrointestinal discomfort, Yvan Vandenplas et al [3] studied the occurrence of digestive issues in infants at this stage in different parts of the world, the study showed that 21% of infants suffer infantile colic, 29% regurgitation, 18% constipation and 9% diarrhea [3]. Milk protein digestion (proteolysis) is a complex process for humans, much more difficult for infants that not have their digestive system developed. Digestion issues can be reduced by altering the amount and type of proteins used. Protein hydrolysates are produced by enzymatic cleavage of protein, resulting in smaller peptides, uptake of smaller peptides is easier and faster than that of free amino acids or intact protein and will eventually lead to improved digestion.

Pevesa HydroRice® RPS-LA (NB112) based comfort formulas provide infant with a complete and digestive supplement very similar to mother milk, reducing crying and general discomfort.



### Key digestion benefits of protein hydrolysates

- ✓ Smaller peptides will facilitate digestion and avoid infants discomfort
- ✓ Faster absorption will induce faster gastric emptying and reduce crying

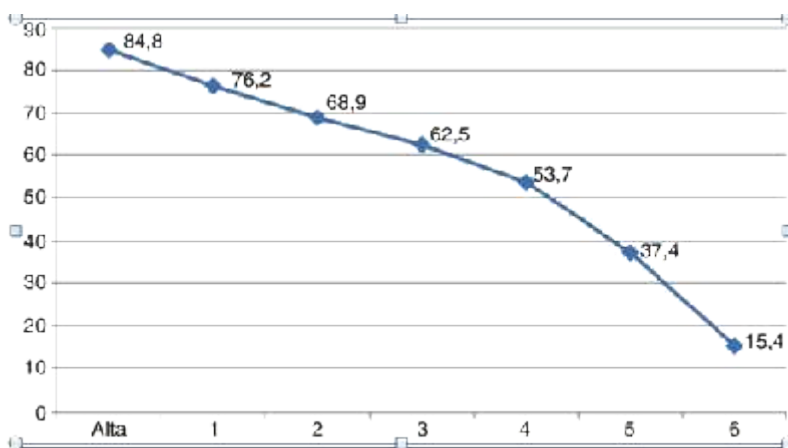


## Clear figures.

The world situation reflects that, although the beginning of the breastfeeding is the majority in almost all countries, a progressive decline occurs throughout the first months of life. The responsible factors are many and diverse being the most important lifestyle and industrial infant formulas development. The data published in 2016 by UNICEF indicate that, globally, only 43% (2 out of 5) of children continue to receive SMI at 6 months of life. The highest rates are presented by South Asian countries with a percentage of LME of 60%, followed by East and South Africa with 57%. Very worrying the fact that in many regions this percentage is only 30% [4].

It is not known in detail what is the situation in the countries with the highest income, but the information available is clear; in the year 2010, in Australia around 90% of women started breastfeeding but, at 6 months, only 2% continued. In United States, in 2013, the percentage of the start mother milk feeding was 76% and at 6 months was reduced to 16%. In Europe, according to the data of the Organization for Cooperation and Economic Development (OECD), in the year 2005 the highest results at the beginning was in the Nordic countries with figures close to 100%, but the percentages of SMI at 6 months below 20%, very far from the WHO goal (50% of lactating babies to 6 months). Countries with the lowest rates of initiation of LM were France or Ireland with levels of 63 and 44%. The United Kingdom, on the other hand, had a 77% beginning of lactation, passing to <1% of Breastfeeding at 6 months [4].

The next picture shows breast milk prevalence at the 6 first months of baby life in Spain [5].



## Breastmilk duration (months)

Cases of cow's milk protein allergy (CMPA) tripled in ten years from 2004 to 2014 according to a revealed study carried out by a group of specialists from the Italian Hospital of Buenos Aires (HIBA), who identified as possible causes changes in lifestyle, genetic predisposition, increased cesareans, the use of antibiotics and environmental factors [6].



## References

1. Approach to milk protein allergy in infants Can Fam Physician. 2008 Sep; 54(9): 1258–1264.
2. Encyclopedia Britannica, Epitope biochemistry.
3. Prevalence and Health Outcomes of Functional Gastrointestinal Symptoms in Infants From Birth to 12 Months of Age , Vandenplas et al 2015
4. Lactancia materna en cifras: Tasas de inicio y duración de la lactancia en España y otros países. Comité de lactancia materna de la asociación española de pediatría (2016).
5. Prevalence of factors associated with the duration of exclusive breastfeeding during the first 6 months of life in the INMA birth cohort in Gipuzkoa(GacSanit2015;29:4-9 - Vol. 29 Núm.1).
6. Clarín Sociedad article (09/08/2017)

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