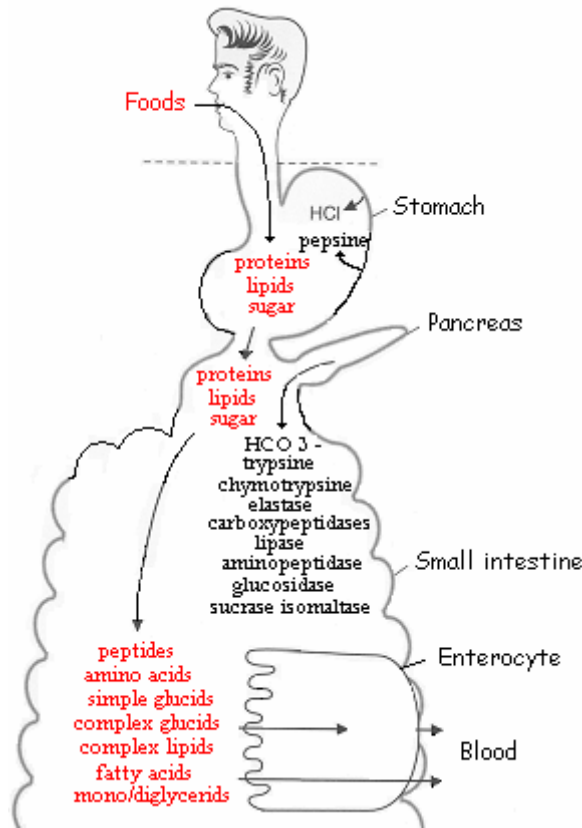


IN VITRO DIGESTIBILITY MEASUREMENT



Steps of *in vivo* digestion

An *in vitro* digestion assay can be used to predict the transformations of oral foods (drugs, health foods ...) during the digestion.

Such modifications can destroy, diminish or on the contrary enhance the physiological activity of the active components brought by foods.

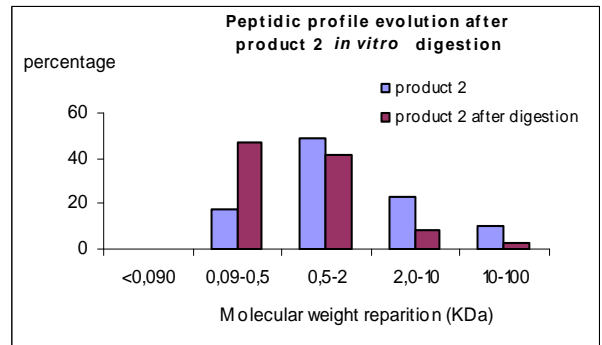
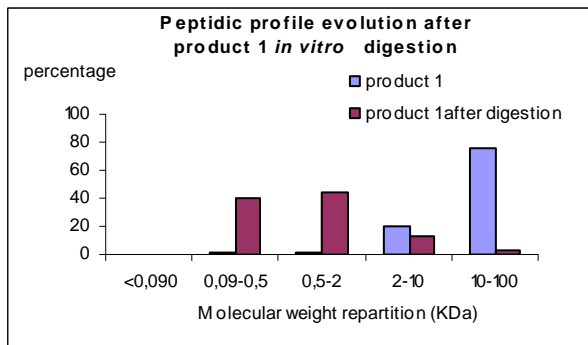
The test is based on the human digestion conditions as described in Glahn's* method and consists in three successive steps :

- * an oral step : mastication (mechanical food breaking up), salivary enzyme action.
- * a gastric step : acidic pH, gastric enzyme action.
- * an intestinal step : pH near from the neutrality, pancreatic enzyme and biliary salt actions.

At the end of the digestion, the digests can be analysed and compared to the initial product.

Comparison of two proteinic products.

Peptidic composition analyses are obtained by a gel filtration HPLC method before and after *in vitro* digestion (Nutrinov results). The components are separated according to their size.



After *in vitro* digestion, the fraction of high molecular weight compounds (proteins, PM >10 KDa) decreases while the proportions of peptides (2-10 KDa), oligopeptides (0.5-2 KDa) and amino acids (0.1-0.5 KDa) increase.

The native product n°1 is rich in proteins. The results show that it will mainly give amino acids and oligopeptides after the digestion process.

The product n°2 is constituted mainly with peptide and oligopeptide fractions. The digestion reactions lead to an increase in the amino acid fraction percentage, higher than the one of the first product (47% against 40% respectively).

It may be concluded that the product n°2 will bring more available amino acids for intestinal absorption which is the following step in the physiological absorption of foods in the gastrointestinal tract.