

Standardization of *in vitro* digestibility and DIAAS method based on the static INFOGEST protocol

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Background: The FAO recommends the digestible indispensable amino acid score (DIAAS) as the measure for protein quality, for which the true ileal digestibility needs to be assessed in humans or pigs. However, due to high costs and ethical concerns, the FAO strongly encourages as well the development of validated *in vitro* methods, which complement the *in vivo* experiments.

Method: Recently, an *in vitro* workflow, based on the validated static INFOGEST protocol, was developed and compared towards *in vivo* data. In parallel to the validation with *in vivo* data, the repeatability and reproducibility of the *in vitro* protocol were tested in an international ring trial (RT) with the aim to establish an international ISO standard method within the International Dairy Federation (IDF). Five different dairy products (skim milk powder, whole milk powder, whey protein isolate, yoghurt, and cheese) were analyzed in 32 different laboratories from 18 different countries, across 4 continents.

Results: *in vitro* protein digestibilities based on Nitrogen, free R-NH₂, and total amino acids as well as DIAAS values were calculated and compared to *in vivo* data, where available.

Conclusion: The *in vitro* method is suited for quantification of digestibility and will be further implemented to other food matrices.