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Status Update Project C50



ISO #####2023(E)
IDF ###:2023(E)

ISO/TC 34/SC 5

Date: 2023-09-07

Secretariat : NEN

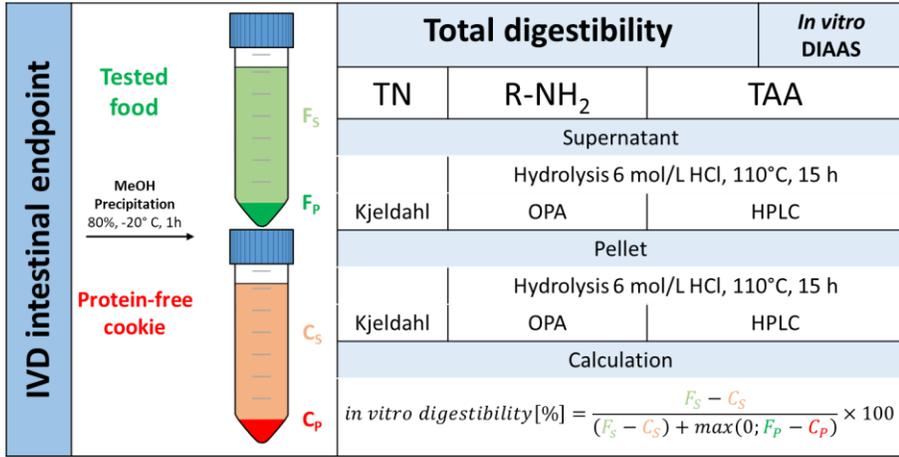
Milk and milk products - *In vitro* digestion protocol for the analysis of protein digestibility and *in vitro* digestible indispensable amino acid score (DIAAS)

Lotti Egger and Reto Portmann

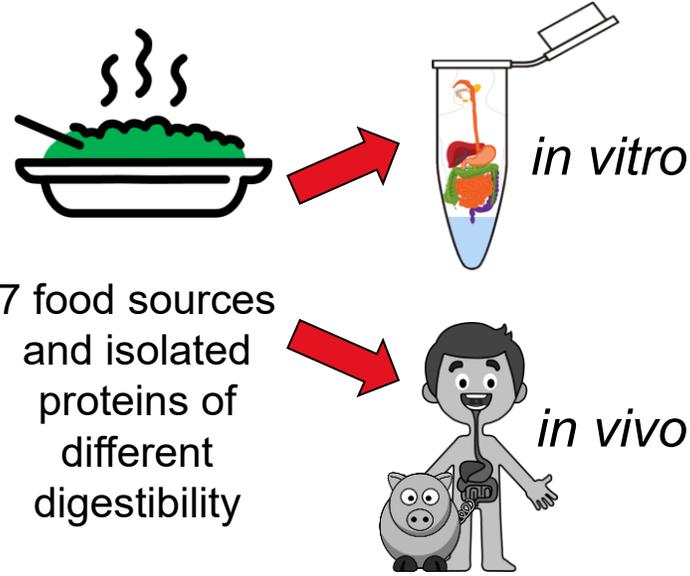


In vitro digestibility and DIAAS workflow: validation

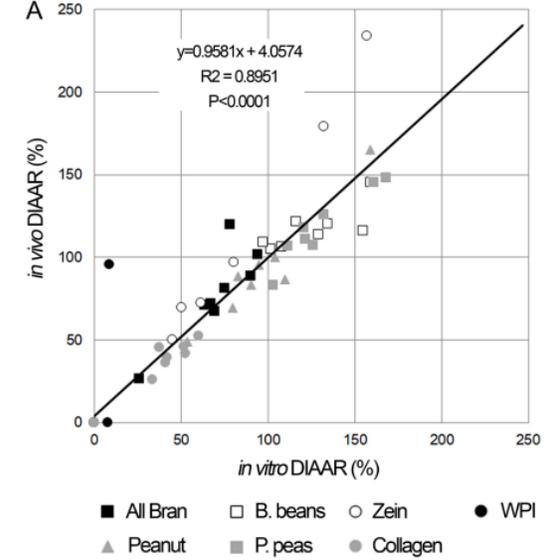
Workflow development



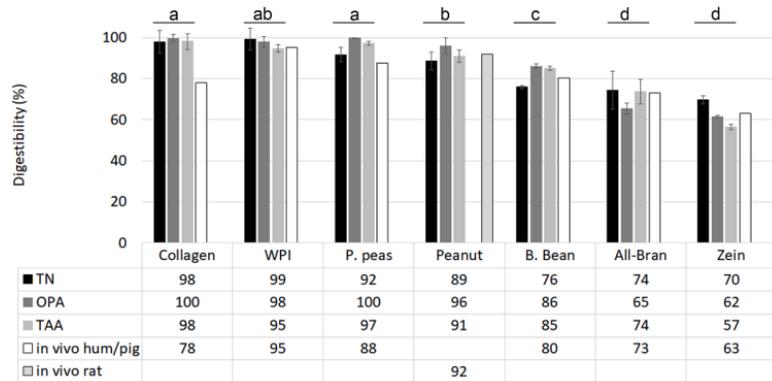
Validation *in vivo* / *in vitro*



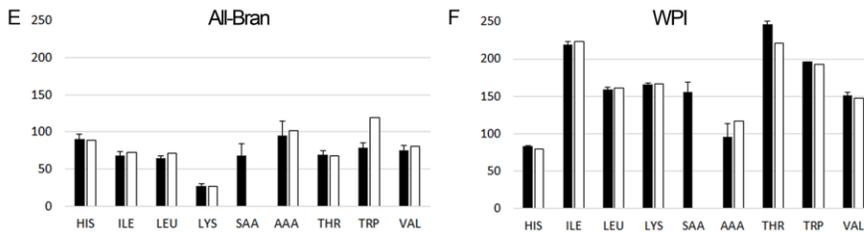
Correlation: 0.96



digestibility



DIAAS



Food Chemistry 404 (2023) 134720

Contents lists available at ScienceDirect



Food Chemistry

journal homepage: www.elsevier.com/locate/foodchem



In vitro digestibility of dietary proteins and *in vitro* DIAAS analytical workflow based on the INFOGEST static protocol and its validation with *in vivo* data

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Ring trial: Standardization of method within IDF and ISO



In vitro digestion of
5 dairy products:
skim milk powder, whole milk powder, whey protein isolate, yoghurt, cheese

and 2 plant-based products:
soy protein isolate, chick pea



The whole set of samples was shipped to 35 labs, a total of 18 labs have sent results back so far



Preliminary statistical evaluation

Statistical evaluations according to ISO 5725 (as recommended by Rob Crawford)

- 1) Exclusion of labs which had technical issue in performing the method
- 2) Exclusion of intra-laboratory heterogenous results with Cochran
- 3) Exclusion of interlaboratory outliers with Grubbs

		SMP	WMP	Gru	WPI	Yog	SPI	ChickPea	
2nd RT	Digestibility (OPA)	Average	91.4	80.2	83.1	95.0	79.9	96.6	87.8
	N		15	15	16	16	14	16	16
	SD	8.1	6.7	8.3	12.3	4.5	11.5	4.0	9.4
	SEM	2.2	1.7	2.2	3.3	1.2	3.2	1.0	2.5
	S _r	8.0	8.8	10.6	10.8	5.6	7.1	4.6	8.7
	S _{rRel}	9.3	9.6	13.3	13.0	5.9	8.9	4.8	9.9
	r (sr*2.8)	22.5	24.5	29.8	30.3	15.6	19.9	12.9	24.4
	S _R	11.3	10.8	13.2	16.2	7.0	13.4	6.0	12.6
	S _{Rrel}	13.2	11.8	16.5	19.5	7.3	16.8	6.2	14.3
	R	31.7	30.3	36.9	45.3	19.6	37.5	16.8	35.3
	R _{rel}	37.0	33.1	46.1	54.5	20.6	46.9	17.4	40.2

- More results are expected, which will be included in the statistical evaluation
- Further statistical tests according to ISO 5725 will be performed



Thank you for your attention

Lotti Egger and Reto Portmann

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