

Human gastrointestinal conditions affect *in vitro* digestibility of peanut and bread proteins

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Table S1: Electrolyte composition of the simulated salivary (SSF), gastric (SGF) and intestinal (SIF) fluids of the *in vitro* digestion protocols.

	¹	Infant²		Early phase adult¹		Late phase adult³
[mM]	SSF	SGF	SIF	SGF	SIF	SGF
NaCl	-	94	164	47.2	38.4	35
KCl	15.1	13	10	6.9	6.8	-
KH ₂ PO ₄	3.7	-	-	0.9	0.8	-
NaHCO ₃	13.6	-	85	25	85	-
MgCl ₂ (H ₂ O) ₆	0.15	-	-	0.1	0.33	-
(NH ₄) ₂ CO ₃	0.06	-	-	0.5	-	-
CaCl ₂ ^a	1.5	-	3	0.15	0.6	-
pH (adjusted with 1 M HCl)	7	5.3	6.6	3	7	1.2

^aCaCl₂ is added separately during the *in vitro* digestion experiments.

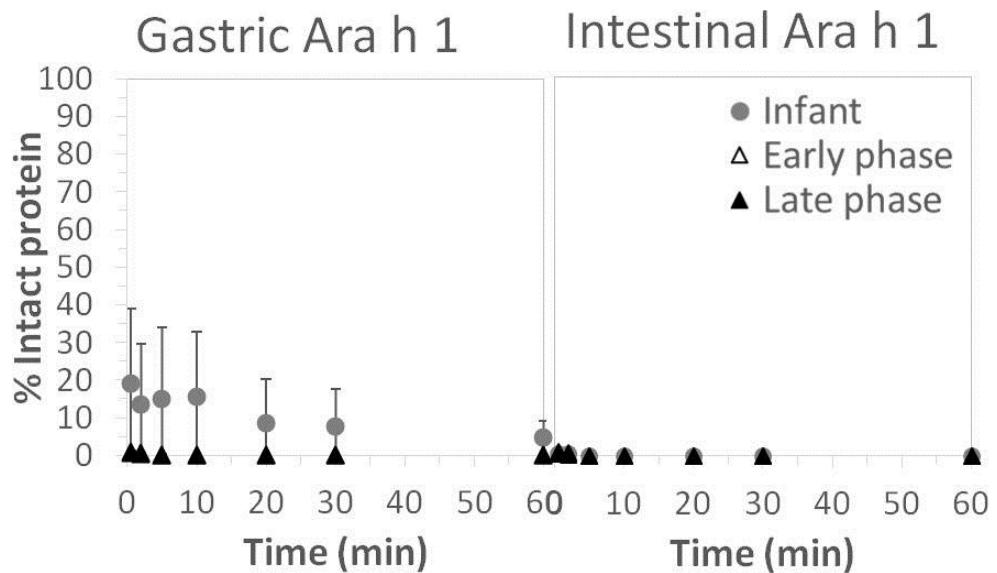


Figure S1: Percentage of intact isolated protein Ara h 1 within the gastric or intestinal phase (infant, early phase or late phase models) determined from densitometry on SDS-PAGE ($n \geq 2$) in Figure 1A. Different letters mean significant differences ($p \leq 0.05$) between models over time. Absence of letters means no significant differences.

Densitometry on bands was performed with the software Image Lab™ 5.1 (Bio-Rad). Data are presented as mean values \pm standard deviation. Comparison between *in vitro* digestion models over time was done with two-way ANOVA and post hoc Bonferroni multiple comparison test with a threshold for significance $p \leq 0.05$.

References

1. M. Minekus, M. Alminger, P. Alvito, S. Ballance, T. Bohn, C. Bourlieu, F. Carriere, R. Boutrou, M. Corredig, D. Dupont, C. Dufour, L. Egger, M. Golding, S. Karakaya, B. Kirkhus, S. Le Feunteun, U. Lesmes, A. Macierzanka, A. Mackie, S. Marze, D. J. McClements, O. Menard, I. Recio, C. N. Santos, R. P. Singh, G. E. Vegerud, M. S. J. Wickham, W. Weitschies and A. Brodkorb, A standardised static in vitro digestion method suitable for food - an international consensus, *Food Funct.*, 2014, **5**, 1113-1124.
2. O. Menard, C. Bourlieu, S. C. De Oliveira, N. Dellarosa, L. Laghi, F. Carriere, F. Capozzi, D. Dupont and A. Deglaire, A first step towards a consensus static in vitro model for simulating full-term infant digestion, *Food Chem.*, 2018, **240**, 338-345.
3. K. Thomas, M. Aalbers, G. A. Bannon, M. Bartels, R. J. Dearman, D. J. Esdaile, T. J. Fu, C. M. Glatt, N. Hadfield, C. Hatzos, S. L. Hefle, J. R. Heylings, R. E. Goodman, B. Henry, C. Herouet, M. Holsapple, G. S. Ladics, T. D. Landry, S. C. MacIntosh, E. A. Rice, L. S. Privalle, H. Y. Steiner, R. Teshima, R. van Ree, M. Woolhiser and J. Zawodny, A multi-laboratory evaluation of a common in vitro pepsin digestion assay protocol used in assessing the safety of novel proteins, *Regul. Toxicol. Pharm.*, 2004, **39**, 87-98.