**S3 Table. Theoretical XPP intake and their portal availability - Study 1.**

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| --- | --- | --- |
|  |  | ***Statistics*** |
|  |  |  |  |  |  |  | ***Matrix/*** | ***XPP*** | ***Inter-*** |
| ***Parameter*** | ***Matrix*** | ***Group*** | ***IPP*** | ***LPP*** | ***VPP*** |  | ***Spike*** | ***effect*** | ***action*** |
|  |  |  |  |  |  |  | ***effect*** |  |  |
| ***Measured 1)******Intake (µmol/kg)*** | *Water-based* | XPP | 13.7 | ± | 0.4 | 15.8 | ± | 0.5 | 14.1 | ± | 0.3 |  |  |  |  |
| *protein* | CasH | 10.3 | ± | 0.1 | 28.0 | ± | 0.8 | 0.5 | ± | 0.03 |  |  |  |  |
|  | CasH+XPP | 23.1 | ± | 1.0 | 42.6 | ± | 2.0 | 13.3 | ± | 0.6 |  |  |  |  |
| ***Theoretical 2) Intake (µmol/kg)*** | *protein* | CasH | 25.9 | ± | 0.3 | 32.8 | ± | 0.9 | 15.9 | ± | 0.8 |  |  |  |  |
|  | CasH+XPP | 38.2 | ± | 1.6 | 67.4 | ± | 3.1 | 21.2 | ± | 0.9 |  |  |  |  |
| ***PDV total net balance (% of theoretical intake)*** | *Water-based* | XPP | 0.08 | ± | 0.03 | 0.09 | ± | 0.03 | 0.07 | ± | 0.02 | P1 | 0.004 | 0.339 | 0.139 |
| *protein* | CasH | 0.10 | ± | 0.01 | 0.14 | ± | 0.02 | 0.19 | ± | 0.03\* | P2 | 0.480 | 0.01 | 0.478 |
|  | CasH+XPP | 0.12 | ± | 0.02 | 0.10 | ± | 0.03 | 0.18 | ± | 0.04 |  |  |  |  |

**Intake of the tri-peptides isoleucine-proline-proline (IPP), leucine-proline-proline (LPP), valine-proline-proline (VPP) in a water-based matrix (synthetic XPP) or in a protein matrix (casein hydrolysate rich in XPP: CasH).** Values are means ± SEM; XPP: n=9; CasH: n=8; CasH+XPP: n=10. 1) Intake is average (measured) amount of free available XPP in each test mixture.2) Intake is theoretically intake, considering the tri-peptide sequences in the source of the CasH: amino acid sequence of bovine k and β casein (www.genome.jp; CASB-BOVIN, CASK-BOVIN)

**Portal bioavailability measured as post-prandial total net release to the portal system (PDV total net balance) after an *intra gastric* bolus administrated of the tri-peptides isoleucine-proline-proline (IPP), leucine-proline-proline (LPP), valine-proline-proline (VPP) in a water-based matrix (XPP) or in a protein matrix (XPP containing casein hydrolysate: CasH).**Values are means ± SEM; XPP: n=8; CasH: n=8; CasH+XPP: n=9. Significance: p<0.05. Tendency: p<0.10. p1: significance for comparison of water-based matrix (XPP) with protein matrix (CasH): Two-way ANOVA p2: significance for comparison between spiked (CasH+XPP) and non-spiked protein matrix (CasH): Two-way ANOVA.When appropiate post-hoc unpaired t-test is done:\*): p<0.05 significance for comparison IPP, LPP or VPP of water-based matrix (XPP) relative to protein matrix (CasH).