

Supporting Informations

Table S1: Proximate analysis of PR samples, distinguished according to their ripening time and salt content. Low-salt samples are labelled as “L”, whereas conventional samples as “C”.

| Sample | Ripening | Umidity (%) | Fat (%) | Protein (%) | NaCl (%) |
|--------|-----------|-------------|---------|-------------|----------|
| 1L | 15 months | 31.24 | 34.33 | 29.16 | 1.45 |
| 2L | 30 months | 26.53 | 36.18 | 31.42 | 1.43 |
| 3L | 15 months | 31.37 | 32.53 | 30.04 | 1.26 |
| 4L | 30 months | 28.11 | 34.04 | 31.50 | 1.56 |
| 5L | 15 months | 31.68 | 32.09 | 29.43 | 1.49 |
| 6L | 30 months | 28.19 | 33.66 | 31.68 | 1.45 |
| 7L | 15 months | 30.71 | 32.99 | 30.08 | 1.28 |
| 8L | 30 months | 27.99 | 34.38 | 31.19 | 1.56 |
| 9L | 15 months | 31.46 | 32.59 | 29.95 | 1.37 |
| 10L | 30 months | 27.83 | 34.18 | 32.00 | 1.59 |
| 11C | 15 months | 30.97 | 32.50 | 30.15 | 1.58 |
| 12C | 30 months | 28.51 | 33.71 | 31.16 | 1.69 |
| 13C | 15 months | 31.07 | 33.28 | 29.64 | 1.57 |
| 14C | 30 months | 27.62 | 34.94 | 30.99 | 1.6 |
| 15C | 15 months | 30.43 | 33.68 | 29.72 | 1.55 |
| 16C | 30 months | 28.26 | 34.83 | 30.82 | 1.65 |
| 17C | 15 months | 31.36 | 32.87 | 29.92 | 1.61 |
| 18C | 30 months | 28.22 | 34.18 | 31.00 | 1.82 |
| 19C | 15 months | 31.17 | 32.92 | 29.89 | 1.45 |
| 20C | 30 months | 28.83 | 33.95 | 30.91 | 1.58 |

Table S2: Identified peptide sequences in Parmigiano-Reggiano cheese. Peptides are list in order of increasing molecular weight (MW). Chromatographic retention time (r.t.), molecular weight (MW), base peak and diagnostic fragments (listed using the standard peptide notation an, bn, cn, xn, yn, zn) are included.

| Peptide | rt (min) | MW | Base peak | Diagnostic Fragments | Proposed Identification |
|---------|----------|-----|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| IS | 24,2 | 312 | 313 (MH ⁺) | | Phe-Phe |
| p1 | 17,4 | 189 | 190.16 (MH ⁺) | 118.1 (V); 144.13 (a1); 172.14 (b1, V, MH ⁺ -H ₂ O) | N-lactoyl Val |
| p2 | 21,7 | 203 | 204.15 (MH ⁺) | 132.19 (MH ⁺ -lactate); 158.13 (a1); 186.19 (b1, MH ⁺ -H ₂ O); 204.28 (MH ⁺); 226.36 (MH ⁺ Na ⁺); 231.21 (MH ⁺ NH ₄ ⁺); 242.25 (MH ⁺ K ⁺) | N-lactoyl Ile |
| p3 | 21,9 | 203 | 204.15 (MH ⁺) | 132.19 (MH ⁺ -lactate); 158.13 (a1); 186.19 (b1, MH ⁺ -H ₂ O); 204.28 (MH ⁺); 226.36 (MH ⁺ Na ⁺); 231.21 (MH ⁺ NH ₄ ⁺); 242.25 (MH ⁺ K ⁺) | N-lactoyl Leu |
| p4 | 14,68 | 204 | 205.28 (MH ⁺) | 146.09 (c1, E); 159.19 (a2, G); 188.32 (z2, E) | Trp |
| p5 | 16,4 | 221 | 222.22 (MH ⁺) | 176.19 (a1, M); 204.2 (MH ⁺ -H ₂ O) | N-lactoyl Met |
| p6 | 23,6 | 237 | 238 (MH ⁺) | 166.31 (F); 192.31 (a1); 220.11 (MH ⁺ -H ₂ O); 238.26 (MH ⁺) | N-lactoyl Phe |
| p7 | 17,95 | 244 | 245.24 (MH ⁺) | 132.06 (y2); 158.13 (x2); 227.35 (b2) | γ-Ile-Ile |
| p8 | 20,26 | 244 | 245.24 (MH ⁺) | 132.06 (y2); 158.13 (x2); 227.35 (b2); 245.5 (MH ⁺) | γ-Leu-Leu |
| p9 | 9,87 | 246 | 247.37 (MH ⁺) | 118.16 (y1, E); 130.12 (b2, V) | γ-Glu-Val |
| p10 | 11,91 | 253 | 254 (MH ⁺) | | Not identified |
| p11 | 16,7 | 253 | 254.2 (MH ⁺) | 208.17 (a1, Y); 236.18 (b1, Y, MH ⁺ -H ₂ O) | N-lactoyl Tyr |
| p12 | 15,21 | 260 | 261.4 (MH ⁺) | 130.4(b1, E); 132.13 (y1, L); 158.06 (x1, L); 244.38 (z2, E) | γ-Glu-Ile |
| p13 | 15,83 | 260 | 261.27 (MH ⁺) | 130.4(b1, E); 132.13 (y1, L); 158.06 (x1, L); 244.38 (z2, E) | γ-Glu-Leu |
| p14 | 18,7 | 264 | 265.32 (MH ⁺) | | Asp-Met/Val-Phe |
| p15 | 2,31 | 276 | 277.29 (MH ⁺) | 148.29 (y2, E) | Pyr-Phe |
| p16 | 9,76 | 278 | 279.13 (MH ⁺) | | γ-Glu-Met |
| p17 | 17,17 | 294 | 295.31 (MH ⁺) | 130.12 (b1, E); 166.2 (y1, F); 278.29 (z2, E, MH ⁺ -NH ₃) | γ-Glu-Phe |
| p18 | 18,4 | 294 | 295.18 (MH ⁺) | | γ-Tyr-Ile/γ-Tyr-Leu |
| p19 | 12,61 | 310 | 311 (MH ⁺) | 182.1 (y1) | γ-Glu-Tyr |
| p20 | 3,63 | 362 | 182.2 (MH ₂) ²⁺ | 182.2 (MH ₂) ²⁺ ; 363.41 (MH ⁺) | β-CN (121-123) |
| p21 | 14,28 | 402 | 202.02 (MH ₂) ²⁺ | 193.17 (b4 (+2), T); 346.32 (y3, E) | K-CN (128-131) |
| p22 | 13,21 | 416 | 417.5 (MH ⁺) | 132.18 (y1, L); 158.18 (x1, L); 258.3 (a2, E); 286.3 (b2, E) | β-CN (1-3) |
| p23 | 12,94 | 452 | 227.09 (MH ₂) ²⁺ | 348.44 (b3, L); 453.31 (MH) ⁺ | K-CN (101-104) |
| p24 | 18,81 | 484 | 243.25 (MH ₂) ²⁺ | 116.17 (y2(+2), R); 166.24 (y3(+2), V) | β-CN (199-203) |
| p25 | 19,3 | 536 | 537 (MH ⁺) | | αS1-CN (1-4) |
| p26 | 21,7 | 553 | 277.36 (MH ₂) ²⁺ | 277.36 (MH ₂) ²⁺ ; 553.18 (MH ⁺) | β-CN (171-175) |
| p27 | 13,81 | 578 | 579.58 (MH ⁺) | 376.37 (b3, F) | αS1-CN (30-34) |
| p28 | 18,93 | 678 | 340.4 (MH ₂) ²⁺ | 340.27 (MH ₂) ²⁺ | β-CN (60-65) |
| p29 | 49,1 | 689 | 230.48 (MH ₃) ³⁺ | | β-CN (133-138) |
| p30 | 12,61 | 746 | 374 (MH ₂) ²⁺ | 374 (MH ₂) ²⁺ ; 747 (MH ⁺) | αS1-CN (104-109) |
| p31 | 20,79 | 755 | 379.03 (MH ₂) ²⁺ | 158.06 (x1, L); 166 (y1, F); 494.33 (b4, H) | β-CN (47-52) |
| p32 | 17,71 | 780 | 390.27 (MH ₂) ²⁺ | 261.27 (MH ₃) ³⁺ ; 390.27 (MH ₂) ²⁺ | β-CN (170-176) |
| p33 | 29,8 | 782 | 392.4 (MH ₂) ²⁺ | 261.33 (MH ₃) ³⁺ ; 392.4 (MH ₂) ²⁺ | β-CN (72-78) |
| p34 | 21,31 | 787 | 394.06 (MH ₂) ²⁺ | 132.13 (y1, L); 399.5 (b3, L); 528.31 (b4, E); 657.44 (b5, E); 788.57 (MH ⁺) | β-CN (1-6) |
| p35 | 27,35 | 792 | 396.99 (MH ₂) ²⁺ | 396.99 (MH ₂) ²⁺ ; 792.43 (MH ⁺) | αS1-CN (18-23) |
| p36 | 28,65 | 805 | 806.53 (MH ⁺) | 245.18 (y2, P); 562.36 (b5, F) | αS1-CN (24-30) |
| p37 | 30,04 | 810 | 405.96 | 166.17 (b3 (+2), E); 230.35 (b4 (+2), K); 405.96 (MH ₂) ²⁺ | αS1-CN (190-196) |

| | | | | | |
|-----|-------|------|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| p38 | 28,29 | 905 | 453.51 (MH ₂ ²⁺) | 166.17 (y1, F); 244.24 (b2, E); 370.92 (b6(+2), R) | αS1-CN (17-23) |
| p39 | 19,96 | 953 | 954.48 (MH ⁺) | 230.28 (y6 (+3), P); 725.40 (b6, P); 954.48 (MH ⁺) | β-CN (145-151) |
| p40 | 44,96 | 1029 | 258.54 (MH ₄ ⁴⁺) | 258.47 (MH ₄ ⁴⁺); 515.75 (MH ₂ ²⁺) | β-CN (132-140) |
| p41 | 33,05 | 1151 | 576.39 (MH ₂ ²⁺) | 116.10 (y2, I); 172.03 (y3, I); 205.28 (b4, R); 316.53 (y4+ Na, P); 449.38 (y8, R); 502.18 (y10-2C=O, P); 504.11 (a10, I) 553.45 (a11, V) | β-CN (199-209) |
| p42 | 19,45 | 1198 | 400.51 (MH ₃ ³⁺) | 156.27 (b3(+2), P); 229.15 (b6(+3), R); 394.33 (b10(+3), Y); 334.76 (z (+3), D); 400.51 (y6(+2), E), (MH ₃ ³⁺) | αS1-CN (85-94) |
| p43 | 32,74 | 1237 | 619.7 (MH ₂ ²⁺) | 130.2 (z1, K) 158.13 (A) 192.31 659.11 (b7, E) 790.77 (z7-NH ₃ ³⁺ , F) 823.68 (y7, F) 904.21 (y8-NH ₃ , P) 999.7 (x9-H ₂ O, A) | αS1-CN (24-34) |
| p44 | 16,7 | 1268 | 634.57 (MH ₂ ²⁺) | 423.45 (MH ₃ ³⁺); 634.57 (MH ₂ ²⁺) | αS1-CN (91-101) |
| p45 | 24,5 | 1329 | 665.5 (MH ₂ ²⁺) | 132.18 (y1, I); 665.56 (b5, H) | αS1-CN (117-127) |
| p46 | 17,9 | 1347 | 675 (MH ₂ ²⁺) | 527.1 ((MH ₂ ²⁺) -3H ₃ PO ₄); 576.7 ((MH ₂ ²⁺) -2H ₃ PO ₄); 625.8 (MH ₂ ²⁺) -H ₃ PO ₄ ; | β-CN (16-25)3P |
| p47 | 26,05 | 1357 | 679.65 (MH ₂) ²⁺ | 340.46 (MH ₄ ⁴⁺); 453.15 (MH ₃ ³⁺); 679.52 (MH ₂) ²⁺ | β-CN (142-152) |
| p48 | 23,05 | 1385 | 462.88 (MH ₃ ³⁺) | 206.4 (c3(+2), V); 463 (MH ₃ ³⁺); 605.8 (x5, E) | αS1-CN (23-34) |
| p49 | 30,58 | 1494 | 499.25 (MH ₃ ³⁺) | 416.8 (y11(+3), A); 589.62 (y10(+2), P); 625(y11(+2), A) | αS1-CN (24-36) |
| p50 | 20,31 | 1590 | 796.09 (MH ₂ ²⁺) | 158.2 (b3(+2), F); 245.24 (y4(+2), K); 531.11 (MH ₃ ³⁺); 795.9 (MH ₂ ²⁺) | β-CN (195-209) |
| p51 | 21,55 | 1703 | 568.87 (MH ₃ ³⁺) | 568.87 (MH ₃ ³⁺); 581.77 [(MH ₂ K) ³⁺]; 1175.05 (b9, T) | β-CN (16-28)3P |
| p52 | 30,72 | 1707 | 570.1 (MH ₃ ³⁺) | 674.87 (y6, G); 696.14 (y12(+2), P); 731.52 (y13(+2), A) | αS1-CN (24-38) |
| p53 | 22,42 | 1790 | 597.6 (MH ₃ ³⁺) | 597.67 (MH ₃ ³⁺); 610.5 (MH ₂ K ³⁺); 896.5 (MH ₂ ²⁺) | β-CN (15-28)3P |
| p54 | 21,98 | 1870 | 936.13 (MH ₂ ²⁺) | 624.3 (MH ₃ ³⁺); 636.9 (MH ₂ K ³⁺); 936.33 (MH ₂ ²⁺) | β-CN (15-28)4P |
| p55 | 36,32 | 1881 | 941.38 (MH ₂ ²⁺) | 817.63 (MH ₂ ²⁺ +Na) | β-CN (193-209) |
| p56 | 25,8 | 1937 | 647.07 (MH ₃ ³⁺) | 213.39 (z(+2), P); 230.28 (y2, P); 384.55 (b3, L); 485.42 (MH ₄ ⁴⁺); 570.80 (y5+, E); 647.01 (MH ₃ ³⁺); 806.39 (b13(+2), I); 970.17 (MH ₂ ²⁺); 936.86 (x8(+1), P) | αS1-CN (99-114) |
| p57 | 20,98 | 1965 | 983.67 (MH ₂ ²⁺) | 132.19 (a4(+3), Q); 983.67 (MH ₂) ²⁺ | β-CN (172-188) |
| p58 | 21,41 | 1999 | 667.4 (MH ₃ ³⁺) | 393.93 (b11(+3), T) - H ₃ PO ₄ ; 680.2 (MH ₂ K ³⁺) | β-CN (14-28)4P |
| p59 | 19,3 | 2067 | 1034.5 (MH ₂ ²⁺) | 517.7 (MH ₄ ⁴⁺); 1034.5 (MH ₂ ²⁺) | αS2-CN (55-74) |
| p60 | 19,82 | 2098 | 700.8 (MH ₃ ³⁺) | 243.3 (z6(+3), I); 377 (y11(+3), S) -H ₃ PO ₄ ; 700.2 (MH ₃ ³⁺) | β-CN (13-28)4P |
| p61 | 38,09 | 2107 | 1054.63 (MH ₂ ²⁺) | 703.6 (MH ₃ ³⁺); 1054.63 (MH ₂ ²⁺) | β-CN (191-209) |
| p62 | 29,15 | 2211 | 737.94 (MH ₃ ³⁺) | 563.5 ((z15(+3), E) -H ₃ PO ₄); 751.2 (MH ₂ K ³⁺); 1475.3 ((z12, S) - H ₃ PO ₄) | β-CN (12-28)4P |
| p63 | 26,92 | 2247 | 750.07 (MH ₃ ³⁺) | 282.28 (b8(+3), A); 750 (MH ₃ ³⁺); 1124.38 (MH ₂ ²⁺) | β-CN (96-114) |
| p64 | 30,4 | 2318 | 773.61 (MH ₃ ³⁺) | 580.44 (MH ₄ ⁴⁺); 773.68 (MH ₃ ³⁺) | αS1-CN (80-98) |
| p65 | 34,02 | 2341 | 781.39 (MH ₃ ³⁺) | | β-CN (11-28)4P |
| p66 | 28,6 | 2764 | 692.15 (MH ₄ ⁴⁺) | 692 (MH ₄ ⁴⁺); 922.5 (MH ₃ ³⁺) | αS1-CN (1-23) |
| p67 | 27,1 | 2854 | 571.8 (MH ₅ ⁵⁺) | 476.58 (MH ₆ ⁶⁺); 714.36 (MH ₄ ⁴⁺); 952.09 (MH ₃ ³⁺); | αS2-CN (185-207) |
| p68 | 25,56 | 2879 | 720.95 (MH ₄ ⁴⁺) | | αS2-CN (6-28) 3P |
| p69 | 33,67 | 3051 | 763.7 (MH ₄ ⁴⁺) | 936.53 (y23 (+3), Q); 1018.8 (MH ₃ ³⁺) | αS1-CN (125-140) |
| p70 | 34,01 | 3252 | 813.97 (MH ₄ ⁴⁺) | 781.13 (b7, Q); 814 (MH ₄ ⁴⁺); 1085 (y9, A) | β-CN (83-111) |
| p71 | 28,62 | 3452 | 691.96 (MH ₅ ⁵⁺) | 691.96 (MH ₅ ⁵⁺); 864.1 (MH ₄ ⁴⁺) | αS1-CN (157-188) |
| p72 | 31,03 | 3477 | 697.61 (MH ₅ ⁵⁺) | 697.61 (MH ₅ ⁵⁺); 870 (MH ₄ ⁴⁺) | αS1-CN (156-187) |
| p73 | 27,7 | 3580 | 597.6 (MH ₆ ⁶⁺) | 597.6 (MH ₆ ⁶⁺); 717 (MH ₅ ⁵⁺); 848.7; 866.5; 896 (MH ₄ ⁴⁺) | αS1-CN (157-189) |
| p74 | 34,6 | 3602 | 901.55 (MH ₄ ⁴⁺) | 678.46; 721.61(MH ₅ ⁵⁺); 901.55 (MH ₄ ⁴⁺) | αS1-CN (85-114) |
| p75 | 27,5 | 3684 | 922.03 (MH ₄ ⁴⁺) | 737.77 (MH ₅ ⁵⁺); 922 (MH ₄ ⁴⁺); 1228.99 (MH ₃ ³⁺) | αS1-CN (145-171) |
| p76 | 40,37 | 3793 | 949.76 (MH ₄ ⁴⁺) | 949.69 (MH ₄ ⁴⁺); 1265.69 (MH ₃ ³⁺) | αS2-CN (10-40)3P |
| p77 | 38,4 | 3834 | 959.93 (MH ₄ ⁴⁺) | 959.67 (MH ₄ ⁴⁺); 1279.46 (MH ₃ ³⁺) | αS2-CN (36-68) |
| p78 | 33,36 | 3859 | 772.88 (MH ₅ ⁵⁺) | 644.15 (MH ₆ ⁶⁺); 772.75 (MH ₅ ⁵⁺); 965.98 (MH ₄ ⁴⁺) | αS1-CN (83-114) |

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|------|-------|-------|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| p79 | 32,6 | 3949 | 790.77 (MH ₅ ⁵⁺) | 659(MH ₆ ⁶⁺); 790.7 (MH ₅ ⁵⁺); 988 (MH ₄ ⁴⁺); 1317 (MH ₃ ³⁺) | β-CN (106-139) |
| p80 | 41,5 | 4025 | 1007.28 (MH ₄ ⁴⁺) | 1007.28(MH ₄ ⁴⁺); 1342.57 (MH ₃ ³⁺) | β-CN (57-93) |
| p81 | 39,81 | 4064 | 1017.19 (MH ₄ ⁴⁺) | 1017.19 (MH ₄ ⁴⁺); 1017.17 (γ26, S); 1356.2 (MH ₃ ³⁺) | β-CN (115-149) |
| p82 | 32,78 | 4237 | 707.25 (MH ₆ ⁶⁺) | 707.25 (MH ₆ ⁶⁺); 848.5 (MH ₅ ⁵⁺); 1060.2 (MH ₄ ⁴⁺) | αS1-CN (80-114) |
| p83 | 40,8 | 4453 | 1114.41 (MH ₄ ⁴⁺) | 1114.41 (MH ₄ ⁴⁺); 1485.41 (MH ₃ ³⁺) | β-CN (53-93) |
| p84 | 31,2 | 4510 | 903.28 (MH ₅ ⁵⁺) | 903.28 (MH ₅ ⁵⁺); 1128.77 (MH ₄ ⁴⁺) | β-CN (23-59) 1P |
| p85 | 32,55 | 4993 | 999.57 (MH ₅ ⁵⁺) | 659.04 (b12(+2), V); 833.39 (MH ₆ ⁶⁺); 833.46 (γ15(+2), V); 888.98 (b16(+2), M); 1249.33 (MH ₄ ⁴⁺) | β-CN (87-130) |
| p86 | 30,7 | 5952 | 662.23 (MH ₉ ⁹⁺) | 662.23 (MH ₉ ⁹⁺); 744.89 (MH ₈ ⁸⁺); 850.95 (MH ₇ ⁷⁺); 992.65 (MH ₆ ⁶⁺) | β-CN (23-73) |
| p87 | 30,72 | 7182 | 719.55 (MH ₁₀ ¹⁰⁺) | 799.28 (MH ₉ ⁹⁺); 899.02 (MH ₈ ⁸⁺); 1027.33 (MH ₇ ⁷⁺) | β-CN (99-160) |
| p88 | 39,55 | 7364 | 1056.82 (MH ₇ ⁷⁺) | 1056.95 (MH ₇ ⁷⁺); 1228.19 (MH ₆ ⁶⁺); 1473 (MH ₅ ⁵⁺) | αS2-CN (132-191) P |
| p89 | 39,02 | 7491 | 1249.8 (MH ₆ ⁶⁺) | 1249.8 (MH ₆ ⁶⁺); 1499.31 (MH ₅ ⁵⁺) | αS2-CN (41-104) |
| p90 | 37,6 | 7530 | 1256 (MH ₆ ⁶⁺) | 1256 (MH ₆ ⁶⁺); 1507.09 (MH ₅ ⁵⁺) | β-CN (107-172) |
| p91 | 39,19 | 7733 | 967.45 (MH ₈ ⁸⁺) | 967.38 (MH ₈ ⁸⁺); 1289.77 (MH ₆ ⁶⁺); 1547.72 (MH ₅ ⁵⁺) | αS2-CN (92-157) |
| p92 | 32,13 | 8231 | 1029.96 (MH ₈ ⁸⁺) | 749.61 (MH ₁₁ ¹¹⁺); 824.41 (MH ₁₀ ¹⁰⁺); 915.51 (MH ₉ ⁹⁺); 1176.92 (MH ₇ ⁷⁺) | αS1-CN (97-165) |
| p93 | 37,3 | 8717 | 1246.34 (MH ₇ ⁷⁺) | 793.43 (MH ₁₁ ¹¹⁺); 872.62 (MH ₁₀ ¹⁰⁺); 969.38 (MH ₉ ⁹⁺); 1090.696 (MH ₈ ⁸⁺); 1246.34 (MH ₇ ⁷⁺); 1453.95 (MH ₆ ⁶⁺) | β-CN (102-178) |
| p94 | 36,11 | 8757 | 1251.99 (MH ₇ ⁷⁺) | 876.55 (MH ₁₀ ¹⁰⁺); 974.16 (MH ₉ ⁹⁺); 1095.92 (MH ₈ ⁸⁺); 1251.99 (MH ₇ ⁷⁺); 1460.87 (MH ₆ ⁶⁺) | αS2-CN (36-110) |
| p95 | 36,63 | 8857 | 1266.03 (MH ₇ ⁷⁺) | 985 (MH ₉ ⁹⁺); 1108 (MH ₈ ⁸⁺); 1266 (MH ₇ ⁷⁺) | β-CN (14-89) |
| p96 | 35,35 | 8894 | 1112.81 (MH ₈ ⁸⁺) | 809.39 (MH ₁₁ ¹¹⁺); 890.64 (MH ₁₀ ¹⁰⁺); 989.19 (MH ₉ ⁹⁺); 1112.88 (MH ₈ ⁸⁺); 1271.74 (MH ₇ ⁷⁺) | κ-CN (34-121) |
| p97 | 36,2 | 8983 | 1123.85 (MH ₈ ⁸⁺) | 817.63 (MH ₁₁ ¹¹⁺); 899.16 (MH ₁₀ ¹⁰⁺); 999.1 (MH ₉ ⁹⁺); 1123.85 (MH ₈ ⁸⁺); 1284.31 (MH ₇ ⁷⁺); 1497.91 (MH ₆ ⁶⁺) | β-CN (86-164) |
| p98 | 34,95 | 9022 | 1128.97 (MH ₈ ⁸⁺) | 752.73 (MH ₁₂ ¹²⁺); 821.42 (MH ₁₁ ¹¹⁺); 903.41 (MH ₁₀ ¹⁰⁺); 1003.36 (MH ₉ ⁹⁺); 1128.84 (MH ₈ ⁸⁺); 1289.97 (MH ₇ ⁷⁺) | β-CN (64-144) |
| p99 | 39,5 | 18281 | 1219.48 (MH ₁₅ ¹⁵⁺) | 1143.14 (MH ₁₆ ¹⁶⁺); 1219.48 (MH ₁₅ ¹⁵⁺); 1306.59 (MH ₁₄ ¹⁴⁺) | β-LG B |
| p100 | 40,21 | 18367 | 1225.13 (MH ₁₅ ¹⁵⁺) | 1148.59 (MH ₁₆ ¹⁶⁺); 1225.13 (MH ₁₅ ¹⁵⁺); 1312.51 (MH ₁₄ ¹⁴⁺); 1413.79 (MH ₁₃ ¹³⁺) | β-LG A |

Table S3: Peptides semiquantitative data, as normalized areas against the internal standard Phe-Phe, expressed as mean±standard deviation over all the samples of each group.

| Peptide | MW | Species | 15 months | | | | 30 months | | | |
|---------|-----|---------------------|-----------|-------|--------------|-------|-----------|-------|--------------|-------|
| | | | Low-salt | | Conventional | | Low-salt | | Conventional | |
| | | | Mean | S.D. | Mean | S.D. | Mean | S.D. | Mean | S.D. |
| p1 | 189 | N-lactoyl Val | 0.550 | 0.016 | 0.532 | 0.084 | 0.785 | 0.063 | 0.777 | 0.076 |
| p2 | 203 | N-lactoyl Ile | 0.579 | 0.034 | 0.573 | 0.073 | 0.740 | 0.065 | 0.731 | 0.044 |
| p3 | 203 | N-lactoyl leu | 0.809 | 0.025 | 0.780 | 0.109 | 0.761 | 0.051 | 0.738 | 0.054 |
| p4 | 204 | Trp | 4.967 | 0.195 | 5.409 | 0.692 | 5.289 | 0.723 | 5.812 | 0.590 |
| p5 | 221 | N-lactoyl Met | 0.154 | 0.011 | 0.143 | 0.019 | 0.156 | 0.008 | 0.140 | 0.006 |
| p6 | 237 | N-lactoyl Phe | 0.920 | 0.027 | 0.873 | 0.084 | 1.080 | 0.070 | 1.025 | 0.080 |
| p7 | 244 | γ-Ile-Ile | 0.022 | 0.004 | 0.024 | 0.003 | 0.058 | 0.014 | 0.066 | 0.011 |
| p8 | 244 | γ-Leu-Leu | 0.062 | 0.010 | 0.053 | 0.006 | 0.027 | 0.004 | 0.024 | 0.001 |
| p9 | 246 | γ-Glu-Val | 0.175 | 0.004 | 0.166 | 0.021 | 0.221 | 0.023 | 0.219 | 0.027 |
| p10 | 253 | Not identified | 0.507 | 0.036 | 0.500 | 0.039 | 0.806 | 0.085 | 0.738 | 0.017 |
| p11 | 253 | N-lactoyl Tyr | 0.891 | 0.075 | 0.717 | 0.102 | 0.823 | 0.050 | 0.776 | 0.038 |
| p12 | 260 | γ-Glu-Ile | 0.982 | 0.154 | 0.931 | 0.075 | 1.212 | 0.058 | 1.155 | 0.070 |
| p13 | 260 | γ-Glu-Leu | 1.975 | 0.093 | 1.886 | 0.052 | 2.636 | 0.203 | 2.416 | 0.237 |
| p14 | 264 | Asp-Met/Val-Phe | 0.056 | 0.008 | 0.053 | 0.006 | 0.056 | 0.005 | 0.050 | 0.002 |
| p15 | 276 | Pyr-Phe | 0.465 | 0.046 | 0.425 | 0.033 | 0.391 | 0.073 | 0.403 | 0.038 |
| p16 | 278 | γ-Glu-Met | 0.129 | 0.022 | 0.122 | 0.029 | 0.178 | 0.018 | 0.168 | 0.015 |
| p17 | 294 | γ-Glu-Phe | 1.199 | 0.171 | 1.068 | 0.073 | 1.544 | 0.058 | 1.414 | 0.123 |
| p18 | 294 | γ-Tyr-Ile/γ-Tyr-Leu | 0.144 | 0.088 | 0.104 | 0.021 | 0.081 | 0.038 | 0.055 | 0.013 |
| p19 | 310 | γ-Glu-Tyr | 0.233 | 0.025 | 0.221 | 0.017 | 0.217 | 0.023 | 0.218 | 0.041 |
| p20 | 362 | β-CN (121-123) | 0.109 | 0.010 | 0.104 | 0.013 | 1.482 | 0.264 | 1.423 | 0.094 |
| p21 | 402 | K-CN (128-131) | 0.075 | 0.008 | 0.077 | 0.007 | 0.029 | 0.003 | 0.026 | 0.004 |
| p22 | 416 | β-CN (1-3) | 0.065 | 0.010 | 0.074 | 0.005 | 0.073 | 0.004 | 0.078 | 0.009 |
| p23 | 452 | K-CN (101-104) | 0.123 | 0.004 | 0.135 | 0.014 | 0.236 | 0.032 | 0.257 | 0.026 |
| p24 | 484 | β-CN (199-203) | 0.061 | 0.004 | 0.057 | 0.007 | 0.079 | 0.004 | 0.072 | 0.005 |
| p25 | 536 | αS1-CN (1-4) | 0.030 | 0.007 | 0.030 | 0.003 | 0.009 | 0.001 | 0.009 | 0.001 |
| p26 | 553 | β-CN (171-175) | 0.074 | 0.009 | 0.064 | 0.006 | 0.125 | 0.006 | 0.115 | 0.010 |
| p27 | 578 | αS1-CN (30-34) | 0.020 | 0.005 | 0.016 | 0.001 | 0.048 | 0.004 | 0.045 | 0.006 |
| p28 | 678 | β-CN (60-75) | 0.097 | 0.007 | 0.093 | 0.012 | 0.109 | 0.005 | 0.103 | 0.010 |
| p29 | 689 | β-CN (133-138) | 0.521 | 0.093 | 0.552 | 0.112 | 0.647 | 0.078 | 0.620 | 0.038 |
| p30 | 746 | αS1-CN (104-109) | 0.015 | 0.009 | 0.012 | 0.006 | 0.006 | 0.001 | 0.006 | 0.001 |
| p31 | 755 | β-CN (47-52) | 0.041 | 0.017 | 0.031 | 0.006 | 0.022 | 0.003 | 0.020 | 0.002 |
| p32 | 780 | β-CN (170-176) | 0.055 | 0.015 | 0.042 | 0.002 | 0.080 | 0.004 | 0.071 | 0.007 |
| p33 | 782 | β-CN (72-88) | 0.107 | 0.033 | 0.113 | 0.026 | 0.114 | 0.013 | 0.120 | 0.018 |
| p34 | 786 | β-CN (1-6) | 0.068 | 0.044 | 0.052 | 0.021 | 0.020 | 0.005 | 0.015 | 0.004 |
| p35 | 792 | αS1-CN (18-23) | 0.110 | 0.003 | 0.107 | 0.001 | 0.098 | 0.018 | 0.106 | 0.001 |
| p36 | 805 | αS1-CN (24-30) | 0.101 | 0.014 | 0.096 | 0.005 | 0.095 | 0.010 | 0.085 | 0.016 |
| p37 | 810 | αS1-CN (190-196) | 0.022 | 0.012 | 0.021 | 0.010 | 0.015 | 0.008 | 0.015 | 0.009 |
| p38 | 905 | αS1-CN (17-23) | 0.070 | 0.027 | 0.061 | 0.011 | 0.034 | 0.003 | 0.034 | 0.006 |

| | | | | | | | | | | |
|-----|------|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| p39 | 953 | β -CN (145-151) | 0.016 | 0.004 | 0.010 | 0.001 | 0.021 | 0.007 | 0.013 | 0.006 |
| p40 | 1029 | β -CN (132-140) | 0.382 | 0.049 | 0.387 | 0.058 | 0.255 | 0.027 | 0.252 | 0.019 |
| p41 | 1151 | β -CN (199-209) | 0.008 | 0.002 | 0.008 | 0.001 | 0.011 | 0.003 | 0.011 | 0.001 |
| p42 | 1198 | α S1-CN (85-94) | 0.095 | 0.037 | 0.074 | 0.026 | 0.032 | 0.008 | 0.024 | 0.006 |
| p43 | 1237 | α S1-CN (24-34) | 0.061 | 0.006 | 0.070 | 0.019 | 0.047 | 0.007 | 0.043 | 0.014 |
| p44 | 1268 | α S1-CN (91-101) | 0.015 | 0.009 | 0.010 | 0.004 | 0.014 | 0.004 | 0.010 | 0.004 |
| p45 | 1329 | α S1-CN (117-127) | 0.038 | 0.009 | 0.019 | 0.010 | 0.034 | 0.025 | 0.009 | 0.008 |
| p46 | 1347 | β -CN (16-25)3P | 0.795 | 0.065 | 0.770 | 0.044 | 0.242 | 0.026 | 0.186 | 0.057 |
| p47 | 1357 | β -CN (142-152) | 0.284 | 0.035 | 0.249 | 0.017 | 0.207 | 0.005 | 0.196 | 0.016 |
| p48 | 1385 | α S1-CN (23-34) | 0.032 | 0.003 | 0.032 | 0.003 | 0.066 | 0.027 | 0.051 | 0.010 |
| p49 | 1494 | α S1-CN (24-36) | 0.026 | 0.007 | 0.031 | 0.010 | 0.027 | 0.006 | 0.022 | 0.006 |
| p50 | 1590 | β -CN (195-209) | 0.054 | 0.015 | 0.022 | 0.006 | 0.029 | 0.016 | 0.010 | 0.005 |
| p51 | 1703 | β -CN (16-28)3P | 0.849 | 0.030 | 0.839 | 0.017 | 0.320 | 0.023 | 0.316 | 0.020 |
| p52 | 1707 | α S1-CN (24-38) | 0.072 | 0.016 | 0.084 | 0.017 | 0.057 | 0.017 | 0.067 | 0.021 |
| p53 | 1790 | β -CN (15-28)3P | 0.140 | 0.015 | 0.125 | 0.012 | 0.071 | 0.005 | 0.067 | 0.006 |
| p54 | 1870 | β -CN (15-28)4P | 0.340 | 0.027 | 0.347 | 0.029 | 0.168 | 0.011 | 0.158 | 0.005 |
| p55 | 1881 | β -CN (193-209) | 0.356 | 0.020 | 0.356 | 0.045 | 0.420 | 0.039 | 0.386 | 0.060 |
| p56 | 1937 | α S1-CN (99-114) | 0.132 | 0.090 | 0.103 | 0.039 | 0.195 | 0.116 | 0.169 | 0.089 |
| p57 | 1965 | β -CN (170-183) | 0.029 | 0.021 | 0.008 | 0.009 | 0.052 | 0.035 | 0.014 | 0.015 |
| p58 | 1999 | β -CN (14-28)4P | 0.205 | 0.016 | 0.202 | 0.019 | 0.091 | 0.005 | 0.091 | 0.004 |
| p59 | 2067 | α S2-CN (55-74) | 0.055 | 0.016 | 0.049 | 0.005 | 0.096 | 0.012 | 0.091 | 0.012 |
| p60 | 2098 | β -CN (13-28)4P | 0.245 | 0.026 | 0.232 | 0.038 | 0.119 | 0.007 | 0.108 | 0.005 |
| p61 | 2107 | β -CN (191-209) | 0.022 | 0.002 | 0.024 | 0.003 | 0.027 | 0.003 | 0.026 | 0.003 |
| p62 | 2211 | β -CN (12-28)4P | 0.520 | 0.051 | 0.491 | 0.037 | 0.116 | 0.010 | 0.120 | 0.005 |
| p63 | 2247 | β -CN (96-114) | 0.038 | 0.014 | 0.036 | 0.004 | 0.057 | 0.007 | 0.050 | 0.004 |
| p64 | 2341 | β -CN (11-28)4P | 0.029 | 0.006 | 0.028 | 0.005 | 0.040 | 0.012 | 0.044 | 0.029 |
| p65 | 2318 | α S1-CN (80-98) | 0.045 | 0.027 | 0.042 | 0.017 | 0.027 | 0.012 | 0.025 | 0.007 |
| p66 | 2764 | α S1-CN (1-23) | 0.110 | 0.040 | 0.106 | 0.020 | 0.052 | 0.012 | 0.047 | 0.013 |
| p67 | 2854 | α S2-CN (185-207) | 0.121 | 0.096 | 0.084 | 0.014 | 0.045 | 0.029 | 0.023 | 0.014 |
| p68 | 2879 | α S2-CN (6-28) 3P | 0.019 | 0.011 | 0.015 | 0.007 | 0.024 | 0.008 | 0.025 | 0.006 |
| p69 | 3052 | α S1-CN (125-140) | 0.029 | 0.006 | 0.030 | 0.004 | 0.028 | 0.008 | 0.026 | 0.006 |
| p70 | 3252 | β -CN (83-111) | 0.076 | 0.011 | 0.077 | 0.013 | 0.093 | 0.032 | 0.089 | 0.022 |
| p71 | 3452 | α S1-CN (157-188) | 0.142 | 0.023 | 0.154 | 0.030 | 0.144 | 0.012 | 0.152 | 0.023 |
| p72 | 3477 | α S1-CN (156-187) | 0.026 | 0.003 | 0.026 | 0.004 | 0.081 | 0.036 | 0.054 | 0.003 |
| p73 | 3580 | α S1-CN (157-189) | 0.352 | 0.020 | 0.346 | 0.015 | 0.272 | 0.040 | 0.293 | 0.044 |
| p74 | 3602 | α S1-CN (85-114) | 0.138 | 0.006 | 0.131 | 0.007 | 0.151 | 0.004 | 0.133 | 0.007 |
| p75 | 3684 | α S1-CN (145-171) | 0.034 | 0.025 | 0.022 | 0.005 | 0.025 | 0.014 | 0.013 | 0.004 |
| p76 | 3793 | α S2-CN (10-40)3P | 0.057 | 0.008 | 0.059 | 0.008 | 0.083 | 0.013 | 0.085 | 0.033 |
| p77 | 3834 | α S2-CN (36-68) | 0.061 | 0.011 | 0.052 | 0.009 | 0.102 | 0.024 | 0.078 | 0.015 |
| p78 | 3859 | α S1-CN (83-114) | 0.518 | 0.026 | 0.508 | 0.036 | 0.569 | 0.010 | 0.564 | 0.021 |
| p79 | 3949 | β -CN (106-139) | 0.028 | 0.008 | 0.035 | 0.012 | 0.029 | 0.007 | 0.042 | 0.013 |
| p80 | 4025 | β -CN (57-93) | 0.102 | 0.034 | 0.098 | 0.006 | 0.177 | 0.026 | 0.175 | 0.073 |
| p81 | 4064 | β -CN (115-149) | 0.103 | 0.012 | 0.092 | 0.020 | 0.199 | 0.039 | 0.152 | 0.033 |
| p82 | 4237 | α S1-CN (80-114) | 0.410 | 0.106 | 0.417 | 0.017 | 0.787 | 0.035 | 0.754 | 0.034 |
| p83 | 4453 | β -CN (53-93) | 0.043 | 0.023 | 0.034 | 0.003 | 0.076 | 0.026 | 0.053 | 0.024 |
| p84 | 4510 | β -CN (23-59) 1P | 0.021 | 0.013 | 0.026 | 0.011 | 0.017 | 0.001 | 0.025 | 0.006 |
| p85 | 4993 | β -CN (87-130) | 0.029 | 0.013 | 0.037 | 0.010 | 0.059 | 0.011 | 0.072 | 0.017 |

| | | | | | | | | | | |
|------|-------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| p86 | 5951 | β-CN (23-73) | 0.165 | 0.133 | 0.130 | 0.044 | 0.026 | 0.008 | 0.021 | 0.008 |
| p87 | 7182 | β-CN (99-160) | 0.001 | 0.001 | 0.001 | 0.001 | 0.639 | 0.362 | 0.454 | 0.226 |
| p88 | 7364 | αS2-CN (132-191) P | 0.054 | 0.025 | 0.044 | 0.005 | 0.093 | 0.025 | 0.068 | 0.030 |
| p89 | 7491 | αS2-CN (41-104) | 0.107 | 0.063 | 0.083 | 0.021 | 0.176 | 0.070 | 0.115 | 0.061 |
| p90 | 7530 | β-CN (107-172) | 0.109 | 0.048 | 0.081 | 0.010 | 0.163 | 0.051 | 0.098 | 0.038 |
| p91 | 7733 | αS2-CN (92-157) | 0.122 | 0.057 | 0.098 | 0.006 | 0.202 | 0.053 | 0.130 | 0.048 |
| p92 | 8231 | αS1-CN (97-165) | 0.048 | 0.010 | 0.049 | 0.024 | 0.071 | 0.025 | 0.086 | 0.038 |
| p93 | 8717 | β-CN (102-178) | 0.227 | 0.097 | 0.229 | 0.052 | 0.418 | 0.132 | 0.328 | 0.159 |
| p94 | 8757 | αS2-CN (36-110) | 0.151 | 0.036 | 0.154 | 0.043 | 0.271 | 0.075 | 0.198 | 0.061 |
| p95 | 8857 | β-CN (14-89) | 0.083 | 0.018 | 0.096 | 0.019 | 0.170 | 0.034 | 0.149 | 0.045 |
| p96 | 8894 | κ-CN (34-121) | 0.095 | 0.015 | 0.106 | 0.030 | 0.215 | 0.040 | 0.175 | 0.042 |
| p97 | 8983 | β-CN (86-164) | 0.423 | 0.136 | 0.453 | 0.088 | 0.681 | 0.177 | 0.559 | 0.210 |
| p98 | 9022 | β-CN (64-144) | 0.292 | 0.058 | 0.301 | 0.081 | 0.485 | 0.120 | 0.357 | 0.094 |
| p99 | 18281 | β-LG B | 1.576 | 0.324 | 1.905 | 0.519 | 1.362 | 0.357 | 1.623 | 0.343 |
| p100 | 18367 | β-LG A | 2.483 | 0.554 | 2.574 | 0.479 | 2.159 | 0.620 | 2.322 | 0.676 |

Table S4: Concentrations (g AA /100 g PR) of each amino acid in each sample. Values are provided as mean of two replicates. In “samples” column, the label “L” stands for low-salt, whereas “C” for conventional.

| Samples | Asn | Ala | Asp | Arg | Glu | Gln | Gly | His | Ile | Leu | Met | Phe | Pro | Ser | Trp | Thr | Val | Lys | Tyr |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1q_L | 0.103 | 0.058 | 0.063 | 0.099 | 0.280 | 0.028 | 0.052 | 0.077 | 0.134 | 0.166 | 0.064 | 0.137 | 0.221 | 0.148 | 0.019 | 0.093 | 0.140 | 0.226 | 0.066 |
| 2q_L | 0.112 | 0.054 | 0.053 | 0.123 | 0.264 | 0.031 | 0.055 | 0.087 | 0.130 | 0.160 | 0.070 | 0.148 | 0.225 | 0.147 | 0.021 | 0.098 | 0.136 | 0.207 | 0.075 |
| 3q_C | 0.108 | 0.059 | 0.065 | 0.119 | 0.289 | 0.030 | 0.054 | 0.084 | 0.135 | 0.165 | 0.070 | 0.144 | 0.229 | 0.159 | 0.021 | 0.100 | 0.141 | 0.236 | 0.065 |
| 4q_C | 0.112 | 0.054 | 0.052 | 0.105 | 0.253 | 0.028 | 0.057 | 0.085 | 0.132 | 0.162 | 0.072 | 0.152 | 0.224 | 0.157 | 0.025 | 0.096 | 0.135 | 0.198 | 0.070 |
| 5q_C | 0.106 | 0.053 | 0.050 | 0.111 | 0.252 | 0.029 | 0.054 | 0.080 | 0.129 | 0.156 | 0.069 | 0.143 | 0.214 | 0.149 | 0.023 | 0.093 | 0.131 | 0.198 | 0.064 |
| 6q_C | 0.116 | 0.054 | 0.051 | 0.126 | 0.252 | 0.033 | 0.057 | 0.091 | 0.134 | 0.161 | 0.074 | 0.160 | 0.235 | 0.158 | 0.024 | 0.102 | 0.141 | 0.189 | 0.077 |
| 7q_L | 0.116 | 0.057 | 0.055 | 0.079 | 0.267 | 0.032 | 0.056 | 0.090 | 0.132 | 0.161 | 0.075 | 0.154 | 0.234 | 0.151 | 0.022 | 0.101 | 0.139 | 0.216 | 0.065 |
| 8q_L | 0.109 | 0.054 | 0.057 | 0.090 | 0.269 | 0.033 | 0.055 | 0.087 | 0.130 | 0.162 | 0.072 | 0.149 | 0.231 | 0.144 | 0.020 | 0.099 | 0.137 | 0.217 | 0.060 |
| 9q_C | 0.102 | 0.053 | 0.058 | 0.105 | 0.281 | 0.028 | 0.048 | 0.076 | 0.123 | 0.151 | 0.062 | 0.130 | 0.210 | 0.142 | 0.019 | 0.093 | 0.130 | 0.224 | 0.054 |
| 10q_L | 0.116 | 0.067 | 0.075 | 0.127 | 0.358 | 0.032 | 0.055 | 0.079 | 0.149 | 0.184 | 0.076 | 0.149 | 0.246 | 0.159 | 0.019 | 0.107 | 0.154 | 0.291 | 0.055 |
| 1t_L | 0.110 | 0.067 | 0.068 | 0.092 | 0.286 | 0.010 | 0.059 | 0.085 | 0.145 | 0.173 | 0.081 | 0.165 | 0.258 | 0.190 | 0.029 | 0.104 | 0.154 | 0.243 | 0.055 |
| 2t_L | 0.114 | 0.069 | 0.071 | 0.092 | 0.308 | 0.010 | 0.063 | 0.089 | 0.159 | 0.191 | 0.087 | 0.172 | 0.276 | 0.198 | 0.026 | 0.113 | 0.167 | 0.268 | 0.057 |
| 3t_C | 0.111 | 0.064 | 0.062 | 0.122 | 0.277 | 0.011 | 0.060 | 0.086 | 0.160 | 0.194 | 0.094 | 0.171 | 0.267 | 0.193 | 0.026 | 0.108 | 0.161 | 0.242 | 0.049 |
| 4t_C | 0.109 | 0.062 | 0.061 | 0.084 | 0.270 | 0.009 | 0.060 | 0.087 | 0.140 | 0.167 | 0.078 | 0.166 | 0.253 | 0.187 | 0.033 | 0.099 | 0.149 | 0.218 | 0.056 |
| 5t_C | 0.117 | 0.062 | 0.056 | 0.116 | 0.252 | 0.010 | 0.062 | 0.097 | 0.144 | 0.174 | 0.085 | 0.177 | 0.265 | 0.198 | 0.038 | 0.107 | 0.152 | 0.199 | 0.068 |
| 6t_C | 0.111 | 0.072 | 0.074 | 0.125 | 0.321 | 0.014 | 0.056 | 0.084 | 0.152 | 0.180 | 0.080 | 0.158 | 0.265 | 0.193 | 0.025 | 0.112 | 0.160 | 0.290 | 0.048 |
| 7t_L | 0.115 | 0.065 | 0.059 | 0.122 | 0.267 | 0.018 | 0.060 | 0.091 | 0.157 | 0.190 | 0.096 | 0.174 | 0.268 | 0.191 | 0.025 | 0.113 | 0.159 | 0.243 | 0.045 |
| 8t_L | 0.110 | 0.068 | 0.081 | 0.129 | 0.320 | 0.019 | 0.063 | 0.092 | 0.157 | 0.188 | 0.090 | 0.184 | 0.277 | 0.198 | 0.025 | 0.116 | 0.167 | 0.249 | 0.049 |
| 9t_C | 0.119 | 0.060 | 0.054 | 0.112 | 0.256 | 0.018 | 0.060 | 0.099 | 0.146 | 0.179 | 0.093 | 0.181 | 0.255 | 0.190 | 0.034 | 0.111 | 0.149 | 0.183 | 0.061 |
| 10t_L | 0.127 | 0.069 | 0.058 | 0.135 | 0.270 | 0.018 | 0.060 | 0.091 | 0.148 | 0.173 | 0.086 | 0.175 | 0.274 | 0.204 | 0.026 | 0.124 | 0.161 | 0.270 | 0.061 |

Table S5: Standard deviations (S.D.) of amino acids in each sample, related to the values reported in Table S4.

| S.D. | Asn | Ala | Asp | Arg | Glu | Gln | Gly | His | Ile | Leu | Met | Phe | Pro | Ser | Trp | Thr | Val | Lys | Tyr |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1q_L | 0.001 | 0.001 | 0.001 | 0.007 | 0.001 | 0.001 | 0.001 | 0.003 | 0.008 | 0.010 | 0.003 | 0.005 | 0.000 | 0.002 | 0.001 | 0.004 | 0.008 | 0.002 | 0.001 |
| 2q_L | 0.001 | 0.004 | 0.003 | 0.001 | 0.008 | 0.000 | 0.001 | 0.005 | 0.003 | 0.003 | 0.001 | 0.006 | 0.001 | 0.000 | 0.001 | 0.001 | 0.001 | 0.026 | 0.015 |
| 3q_C | 0.008 | 0.001 | 0.003 | 0.016 | 0.004 | 0.004 | 0.006 | 0.012 | 0.006 | 0.008 | 0.008 | 0.017 | 0.014 | 0.011 | 0.003 | 0.007 | 0.006 | 0.013 | 0.008 |
| 4q_C | 0.001 | 0.002 | 0.002 | 0.002 | 0.007 | 0.000 | 0.000 | 0.000 | 0.001 | 0.003 | 0.005 | 0.001 | 0.004 | 0.003 | 0.000 | 0.001 | 0.003 | 0.008 | 0.006 |
| 5q_C | 0.002 | 0.004 | 0.005 | 0.002 | 0.022 | 0.001 | 0.001 | 0.005 | 0.002 | 0.002 | 0.002 | 0.011 | 0.000 | 0.001 | 0.001 | 0.002 | 0.001 | 0.034 | 0.005 |
| 6q_C | 0.005 | 0.002 | 0.003 | 0.004 | 0.016 | 0.002 | 0.002 | 0.004 | 0.007 | 0.004 | 0.002 | 0.010 | 0.011 | 0.010 | 0.001 | 0.005 | 0.007 | 0.007 | 0.009 |
| 7q_L | 0.002 | 0.004 | 0.003 | 0.001 | 0.006 | 0.003 | 0.000 | 0.002 | 0.004 | 0.007 | 0.005 | 0.001 | 0.002 | 0.004 | 0.000 | 0.004 | 0.003 | 0.021 | 0.010 |
| 8q_L | 0.002 | 0.005 | 0.006 | 0.001 | 0.026 | 0.000 | 0.001 | 0.001 | 0.004 | 0.005 | 0.001 | 0.006 | 0.007 | 0.006 | 0.001 | 0.004 | 0.004 | 0.040 | 0.009 |
| 9q_C | 0.006 | 0.004 | 0.009 | 0.010 | 0.029 | 0.003 | 0.003 | 0.007 | 0.003 | 0.004 | 0.004 | 0.007 | 0.003 | 0.003 | 0.002 | 0.001 | 0.004 | 0.042 | 0.000 |
| 10q_L | 0.004 | 0.000 | 0.005 | 0.009 | 0.026 | 0.003 | 0.003 | 0.009 | 0.000 | 0.001 | 0.006 | 0.008 | 0.005 | 0.007 | 0.002 | 0.005 | 0.000 | 0.010 | 0.009 |
| 1t_L | 0.001 | 0.007 | 0.017 | 0.004 | 0.055 | 0.000 | 0.004 | 0.010 | 0.018 | 0.026 | 0.014 | 0.026 | 0.013 | 0.007 | 0.004 | 0.001 | 0.008 | 0.068 | 0.008 |
| 2t_L | 0.003 | 0.003 | 0.005 | 0.009 | 0.021 | 0.000 | 0.004 | 0.011 | 0.002 | 0.002 | 0.008 | 0.021 | 0.006 | 0.002 | 0.004 | 0.002 | 0.002 | 0.038 | 0.009 |
| 3t_C | 0.004 | 0.002 | 0.004 | 0.011 | 0.015 | 0.000 | 0.003 | 0.009 | 0.006 | 0.011 | 0.015 | 0.018 | 0.000 | 0.003 | 0.005 | 0.000 | 0.002 | 0.043 | 0.002 |
| 4t_C | 0.006 | 0.001 | 0.001 | 0.007 | 0.001 | 0.000 | 0.003 | 0.005 | 0.000 | 0.002 | 0.006 | 0.011 | 0.007 | 0.010 | 0.004 | 0.004 | 0.000 | 0.017 | 0.014 |
| 5t_C | 0.004 | 0.003 | 0.003 | 0.008 | 0.013 | 0.000 | 0.004 | 0.007 | 0.009 | 0.011 | 0.005 | 0.012 | 0.014 | 0.010 | 0.002 | 0.005 | 0.008 | 0.003 | 0.003 |
| 6t_C | 0.005 | 0.001 | 0.005 | 0.007 | 0.020 | 0.001 | 0.002 | 0.005 | 0.001 | 0.001 | 0.005 | 0.002 | 0.004 | 0.002 | 0.001 | 0.004 | 0.000 | 0.002 | 0.000 |
| 7t_L | 0.004 | 0.007 | 0.005 | 0.006 | 0.016 | 0.002 | 0.001 | 0.006 | 0.006 | 0.008 | 0.002 | 0.011 | 0.001 | 0.003 | 0.003 | 0.007 | 0.005 | 0.060 | 0.001 |
| 8t_L | 0.009 | 0.003 | 0.020 | 0.020 | 0.056 | 0.005 | 0.009 | 0.022 | 0.007 | 0.011 | 0.022 | 0.026 | 0.023 | 0.008 | 0.006 | 0.008 | 0.004 | 0.050 | 0.012 |
| 9t_C | 0.000 | 0.002 | 0.001 | 0.002 | 0.000 | 0.001 | 0.001 | 0.002 | 0.002 | 0.001 | 0.000 | 0.003 | 0.004 | 0.001 | 0.001 | 0.001 | 0.002 | 0.023 | 0.017 |
| 10t_L | 0.008 | 0.001 | 0.013 | 0.016 | 0.045 | 0.003 | 0.005 | 0.006 | 0.013 | 0.018 | 0.015 | 0.014 | 0.012 | 0.008 | 0.002 | 0.011 | 0.009 | 0.012 | 0.017 |

Table S6: List of sensory attributes used in this study

| <i>Attributes</i> | <i>Modality</i> | <i>Description</i> |
|---------------------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Color</i> | Visual | Intensity of the sample's cheese color can range from light straw yellow to intense straw yellow |
| <i>Smell intensity</i> | Olfactory | The strenght of stimulation perceived over the cheese stick |
| <i>Butter's smell</i> | Olfactory | Characteristic smell associated with butter |
| <i>Rind's smell</i> | Olfactory | Characteristic smell associated with cheese's rind |
| <i>Boiled vegetable's smell</i> | Olfactory | Characteristic smell associated with boiled vegetables like potatoes, cauliflower, celery and green peas |
| <i>Nut's smell</i> | Olfactory | Characteristic smell associated with hazelnuts, walnut, chestnut, peeled almond |
| <i>Other smells</i> | Olfactory | Characteristic smell associated with propionic, butyric, acid, ammonia, acetic, pungent in the nose, sour, sulphureus, soap, mouldy, putrid, rubber and silage |
| <i>Butter's aroma</i> | Flavour | Characteristic aroma associated with butter |
| <i>Rind's aroma</i> | Flavour | Characteristic aroma associated with cheese's rind |
| <i>Nut's aroma</i> | Flavour | Characteristic aroma associated with hazelnuts, walnut, chestnut, peeled almond |
| <i>Broth's aroma</i> | Flavour | Characteristic aroma associated with meat broth |
| <i>Nutmeg's aroma</i> | Flavour | Characteristic aroma associated with nutmeg |
| <i>Other aroma</i> | Flavour | Characteristic aroma associated with propionic, butyric, acid, ammonia, acetic, pungent in the nose, sour, sulphureus, soap, mouldy, putrid, rubber and silage |
| <i>Sweet</i> | Taste | Taste associated with sugar |
| <i>Salty</i> | Taste | Taste associated with sodium chloride solutions |
| <i>Bitter</i> | Taste | Taste associated with caffeine or quinine solutions |
| <i>Pungent</i> | Taste | Taste associated with acetic acid solutions |
| <i>Elasticity</i> | Texture | Aptitude of cheese's sample to regain its initial thickness after being compressed and deformed |
| <i>Friability</i> | Texture | Aptitude of the cheese's sample to generate numerous fragments at the beginning of chewing |
| <i>Moisture</i> | Texture | Degree of humidity perceived in the mouth during the characterization of the structure |
| <i>Solubility</i> | Texture | A characteristic that develops when the cheese's sample melts very quickly in the saliva, without giving a feeling of filling |
| <i>Presence of grain</i> | Texture | Aptitude of the cheese's sample to generate numerous hard rounded grains at the end of chewing |