

Supplementary data

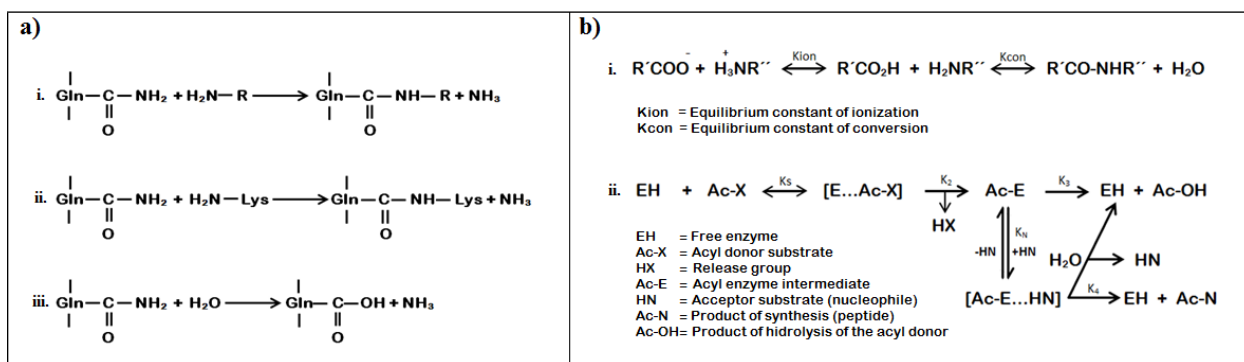


Fig. S1. Reactions catalyzed by transglutaminase (a) i. acyl transfer, ii. incorporation of an ϵ -amino group of Lys and, iii. deamidation; synthesis of peptides by proteases (b) i. thermodynamically controlled and, ii. kinetically controlled synthesis.

Table S1. Mixograph parameters of treated doughs with microbial transglutaminase or chymotrypsin and lysine or valine.

Treatment	MT (s)	PR1 (AU)	PW1 (AU)	PR3 (AU)	PW3 (AU)	RBD (%)
<i>a</i> : WF (Control)	197 ± 2.1 ^{bc}	74 ± 1.4 ^{cd}	46 ± 3.5 ^{ab}	61 ± 0.7 ^{cd}	24 ± 3.5 ^b	18 ± 3.5 ^b
<i>b</i> : 10% Lys/mTG	825 ± 42 ^c	79 ± 5.7 ^d	56 ± 1.4 ^b	79 ± 4.9 ^c	47 ± 2.1 ^c	1 ± 0.9 ^a
<i>c</i> : 2% Lys/mTG	323 ± 10.6 ^d	83 ± 1.4 ^d	51 ± 2.8 ^b	71 ± 2.1 ^{de}	40 ± 1.4 ^c	15 ± 4.0 ^{ab}
<i>d</i> : 5% Val/ChT	120 ± 0 ^a	61 ± 3.5 ^{ab}	31 ± 7.1 ^a	34 ± 1.4 ^a	8 ± 0.7 ^a	44 ± 0.9 ^c
<i>e</i> : 10% Lys/ChT	240 ± 0 ^c	65 ± 1.4 ^{bc}	36 ± 2.1 ^a	54 ± 0.7 ^{bc}	20 ± 0 ^b	18 ± 0.7 ^b
<i>f</i> : 10% Lys _{ME} /ChT	137 ± 2.1 ^{ab}	50 ± 0.7 ^a	55 ± 3.2 ^b	46 ± 4.9 ^{ab}	27 ± 4.6 ^b	8 ± 8.7 ^{ab}

WF, wheat flour alone; Lys, L-Lysine; mTG, microbial transglutaminase; Val, L-valine methyl ester; LysME, L-Lysine methyl ester; ChT, chymotrypsin; MT, mixing time; PR1, peak resistance; PW1, peak width; PR3, height of the curve at three minutes after the peak; PW3, width of the curve at three minutes after the peak; RBD, resistance breakdown. Statistical comparisons were made among rows ($p < 0.05$).