

**Table S1.** Protein concentrations and main process performance parameters of  $\alpha$ -Lactalbumin ( $\alpha$ -La) enriched fraction after high-pressure processing (HPP) of ovine native whey concentrate (NWC) at 600 MPa at 23°C (supernatant). Each value is expressed as mean value  $\pm$  SD (n = 3). Different small letters in the same column indicate significant (P < 0.05) differences according to Tukey test. \*Significant differences regarding the control (untreated) NWC (T-Test).

pH	HPP processing (min)	a-La concentration (mg/mL)	b-Lg B concentration (mg/mL)	b-Lg A concentration (mg/mL)	b-Lg A + B concentration (mg/mL)	Y <sub>a-La</sub> (%)	Pur <sub>a-La</sub> (%)	Preb-Lg B (%)	Preb-Lg A (%)	Preb-Lg A + B (%)
P-pH	Control (untreated)	32.35 $\pm$ 1.65 <sup>cd</sup>	51.89 $\pm$ 2.19 <sup>b</sup>	54.56 $\pm$ 2.19 <sup>a</sup>	106.46 $\pm$ 4.37 <sup>b</sup>	-	23.30 $\pm$ 0.19 <sup>e</sup>	-	-	-
	2	34.04 $\pm$ 0.54 <sup>bc</sup>	3.37 $\pm$ 0.46 <sup>d</sup>	2.97 $\pm$ 0.51 <sup>d</sup>	6.33 $\pm$ 0.97 <sup>de</sup>	62.01 $\pm$ 2.17 <sup>b*</sup>	84.35 $\pm$ 1.83 <sup>b</sup>	96.21 $\pm$ 0.58 <sup>a*</sup>	96.83 $\pm$ 0.61 <sup>a*</sup>	96.53 $\pm$ 0.60 <sup>ab*</sup>
	4	29.09 $\pm$ 2.23 <sup>d</sup>	2.34 $\pm$ 0.10 <sup>d</sup>	1.78 $\pm$ 0.16 <sup>d</sup>	4.12 $\pm$ 0.13 <sup>e</sup>	44.83 $\pm$ 4.60 <sup>c*</sup>	87.56 $\pm$ 0.95 <sup>ab</sup>	97.78 $\pm$ 0.15 <sup>a*</sup>	98.40 $\pm$ 0.14 <sup>a*</sup>	98.10 $\pm$ 0.10 <sup>a*</sup>
	15	15.29 $\pm$ 0.08 <sup>e</sup>	0.52 $\pm$ 0.03 <sup>d</sup>	0.55 $\pm$ 0.01 <sup>d</sup>	1.03 $\pm$ 0.05 <sup>e</sup>	20.71 $\pm$ 1.66 <sup>d*</sup>	93.68 $\pm$ 0.26 <sup>a</sup>	99.58 $\pm$ 0.05 <sup>a*</sup>	99.59 $\pm$ 0.05 <sup>a*</sup>	90.58 $\pm$ 0.05 <sup>a*</sup>
4.6	Acidified (untreated)	37.78 $\pm$ 0.50 <sup>ab</sup>	65.55 $\pm$ 0.57 <sup>a</sup>	59.40 $\pm$ 0.59 <sup>a</sup>	124.95 $\pm$ 1.13 <sup>a</sup>	114.14 $\pm$ 1.03 <sup>a*</sup>	23.21 $\pm$ 0.16 <sup>e</sup>	-22.53 $\pm$ 1.07 <sup>c*</sup>	-5.37 $\pm$ 1.04 <sup>d</sup>	-13.72 $\pm$ 1.03 <sup>d*</sup>
	2	38.44 $\pm$ 1.00 <sup>a</sup>	30.62 $\pm$ 8.50 <sup>c</sup>	31.18 $\pm$ 5.34 <sup>b</sup>	61.80 $\pm$ 13.73 <sup>c</sup>	62.76 $\pm$ 6.08 <sup>b*</sup>	38.84 $\pm$ 5.61 <sup>d</sup>	68.98 $\pm$ 9.57 <sup>b*</sup>	70.02 $\pm$ 6.67 <sup>c*</sup>	69.52 $\pm$ 7.98 <sup>c*</sup>
	4	38.38 $\pm$ 1.03 <sup>ab</sup>	25.64 $\pm$ 2.40 <sup>c</sup>	26.86 $\pm$ 1.45 <sup>b</sup>	52.49 $\pm$ 3.81 <sup>c</sup>	69.06 $\pm$ 5.79 <sup>b*</sup>	42.27 $\pm$ 1.32 <sup>d</sup>	71.54 $\pm$ 3.16 <sup>b*</sup>	71.70 $\pm$ 2.40 <sup>c*</sup>	71.62 $\pm$ 2.73 <sup>c*</sup>
	15	32.85 $\pm$ 2.96 <sup>cd</sup>	8.95 $\pm$ 0.55 <sup>d</sup>	11.26 $\pm$ 1.71 <sup>c</sup>	20.21 $\pm$ 2.26 <sup>d</sup>	62.14 $\pm$ 5.45 <sup>b*</sup>	61.94 $\pm$ 1.65 <sup>c</sup>	89.54 $\pm$ 0.86 <sup>a*</sup>	87.50 $\pm$ 2.07 <sup>b*</sup>	88.49 $\pm$ 1.50 <sup>b*</sup>

(Y<sub>a-La</sub>) = a-La yield. (Pur<sub>a-La</sub>) = a-La Purification degree. (Preb-LgA) = b-Lg A precipitation degree. (Preb-LgB) = b-Lg B precipitation degree.