Supplementary Data

Table S1. The quantity of fatty acid remaining in C18 UFA-treated BLA and BLG complexes after dialysis. Results represent mean ± SD.

UFA-treated BLA complexes	Molar ratio after dialysis (UFA: BLA)	UFA-treated BLG complexes	Molar ratio after dialysis (UFA: BLG)
OA-BLA	6.9±0.11	OA-BLG	7.1±0.43
LA-BLA	8.9±0.03	LA-BLG	6.5±0.14
CLA-BLA	8.0±0.66	CLA-BLG	8.5±0.26
ALA-BLA	9.3±0.29	ALA-BLG	9.2±0.03
GLA-BLA	9.2±0.12	GLA-BLG	9.6±0.13

Table S2. Information of bovine milk allergic patients.

Patient No.	Sex	Age (year)	Milk-related clinical symptoms	Milk S-IgE (kU_A/L)
1	Male	15	Angioedema of the palate	13.67
2	Male	46	Diarrhoea	13.8
3	Male	22	Vomiting, diarrhoea	25.4
4	Female	30	Diarrhoea	35.8
5	Male	23	NK	23.4
6	Female	44	NK	89.8
7	Male	10	Eczema, vomiting	>100
8	Male	24	NK	43.6
9	Male	NK	NK	32
10	Female	19	NK	403.95

NK, not known.

Table S3. The increased optical density fold of C18 UFA-treated BLA and BLG in the UV absorption spectra.

Samples	The maximum optical density (OD_{max})	The increased fold (treated BLA/BLA)	Samples	The maximum optical density (OD_{max})	The increased fold (treated BLG/BLG)
BLA	0.316	/	BLG	0.160	/
hBLA	0.358	1.13	hBLG	0.159	0.99
OA-BLA	0.386	1.22	OA-BLG	0.172	1.08
LA-BLA	0.491	1.55	LA-BLG	0.213	1.33
CLA-BLA	0.463	1.47	CLA-BLG	0.368	2.30
ALA-BLA	0.677	2.14	ALA-BLG	0.428	2.68
GLA-BLA	1.040	3.29	GLA-BLG	0.794	4.96

Table S4. The increased fluorescence intensities fold of C18 UFA-treated BLA and BLG in the ANS fluorescence spectra.

Samples	The maximum fluorescence intensities (FI_{max})	The increased fold (treated BLA/BLA)	Samples	The maximum fluorescence intensities (FI_{max})	The increased fold (treated BLG/BLG)
BLA	1089	/	BLG	2195	/
hBLA	1105	1.01	hBLG	2644	1.20
OA-BLA	1533	1.41	OA-BLG	2581	1.18
LA-BLA	2106	1.93	LA-BLG	2711	1.24
CLA-BLA	1911	1.75	CLA-BLG	3070	1.40
ALA-BLA	2489	2.29	ALA-BLG	3807	1.73
GLA-BLA	3481	3.20	GLA-BLG	4165	1.90

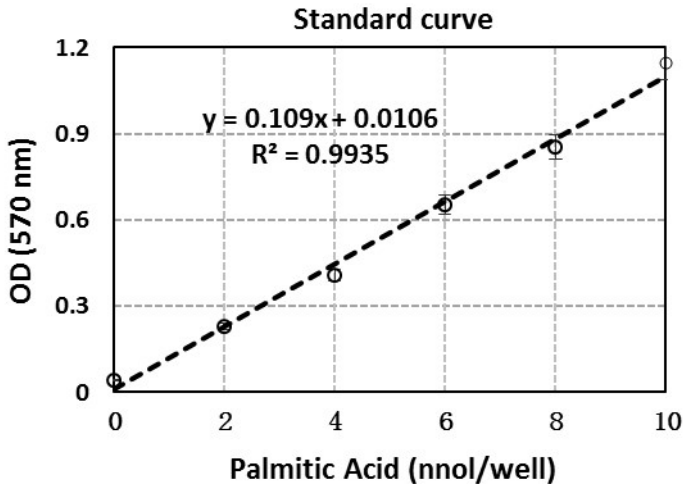

Fig. S1. The palmitic acid standard curve according to the Free Fatty Acid Quantification kit protocol. Briefly, the samples were added to a 96-well plate in several dilutions. In parallel, a standard curve was prepared with known amounts of palmitic acid. FA assay buffer was added to each well to reach a final volume of 50 µL. Acyl-CoA synthetase (2 µL) was then added to each well to convert FA to their CoA derivatives, followed by incubation at 37°C for 30 min. A solution of enzymes, enhancer and a FA probe was added to each well to generate the color. After 30 min of incubation at 37°C in the dark, the absorbance was detected at 570 nm using an ELISA plate reader (Model 1860, Bio-Rad, USA).

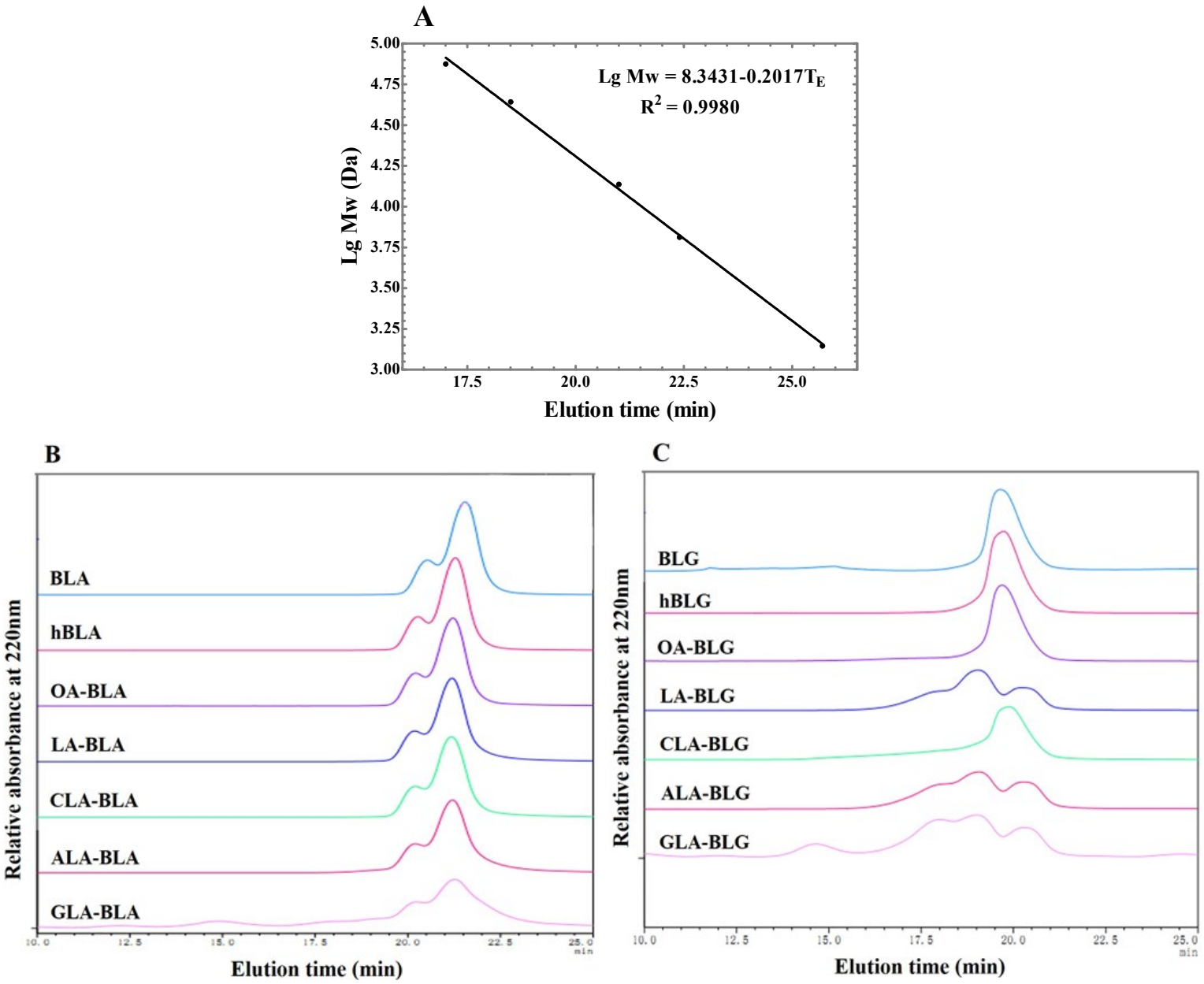

Fig. S2. GF-HPLC of the C18 UFA-treated BLA and BLG. (A) The calibration curve of the PROTEIN KW-802.5 column obtained using as protein standard conalbumin (75 kDa), ovalbumin (44 kDa), ribonuclease A (13.7 kDa), aprotinin (6.5 kDa), and bacitracin A (1.4 kDa). (B) GF-HPLC analyses of the samples of BLA with different kinds of UFA. (C) GF-HPLC analyses of the samples of BLG with different kinds of UFA.