

## Supplementary materials

**Table S1.** Sources, sequences and characteristics of allergens and peptides of MAMA.

Name	Proteins	
<b>n<math>\alpha</math>-cas</b>	$\alpha$ -casein from bovine milk	Sigma (C6780)
<b>n<math>\beta</math>-cas</b>	$\beta$ -casein from bovine milk	Sigma (C6905)
<b>n<math>\kappa</math>-cas</b>	$\kappa$ -casein from bovine milk	Sigma (C0406)
<b>nALA</b>	$\alpha$ -lactalbumin from bovine milk	Sigma (L5385)
<b>nBLG</b>	$\beta$ -lactoglobulin from bovine milk	Sigma (L3908)
<b>nBSA</b>	Bovine serum albumin	Sigma (A2058)
<b>nLf</b>	Lactoferrin from bovine milk	Sigma (L9507)
<b>r<math>\alpha</math>S1-cas</b>	MRPKHPIKHQ GLPQEVLENEN LLRFFVAPFP EVFGKEKVNE LSKDIGSEST EDQAMEDIKQMEAESISSSE EIVPNSVEQK HIQKEDVPSE RYLGYLEQLL RLKKYKVPQL EIVPNSAEERLHSMKEGIHA QKKEPMIGVN QELAYFYPEL FRQFYQLDAY PSGAWYYVPL GTQYTDAPSFSDIPNPIGSE NSEKTTMPLW <b>HHHHHH</b>	GenBank: EU221551.1 and ABW98936.1; <i>E. coli</i> BL21- expressed; [33]
<b>r<math>\alpha</math>S2-cas</b>	MKNTMEHVSS SEESIISQET YKQEKMAIN PSKENLCSTF CKEVRNANEEESIGSSSE ESEAVATEEV KITVDDKHYQ KALNEINQFY QKFPQYLQYLYQGPIVLNPW DQVKRNAVPI TPTLNREQLS TSEENSKKT DMESTEVFTKKTKLTEEEKN RLNFKKISQ RYQKFALPQY LKTVYQHQA MKPWIQPKTK VIPYVRYL <b>HHHHHH</b>	<i>E. coli</i> BL21-expressed; [9]
<b>r<math>\beta</math>-cas</b>	MRELEELNVP GEIVESLSSS EESITRINKK IEKFQSEEQQ QTEDELQDKI HPFAQTQSLV YPFPGPPIPS LPQNIPPLTQ TPVVVPPFLQ PEVMGVSKVK EAMAPKHKEM PFPKYPVEPF TESQSLTLTD VENLHLPLPL LQSWMHQPHQ PLPPTVMFPP QSVLSLSQSK VLPVPQKAVP YPQRDMPIQA FLLYQEPVLG PVRGPFPIIV <b>HHHHHH</b>	<i>E. coli</i> BL21-expressed; [9]
<b>r<math>\kappa</math>-cas</b>	MQEQNQEQPI RCEKDERFFS DKIAKYIPIQ YVLSRYPSYG LNYQQKPVA LINNQFLPYP YYAKPAAVRS PAQILQWQVL SNTVPAKSCQ AQPTTMARHP HPHLSFMAIP PKNQDKTEI PTINTIASGE PTSTPTIEAV ESTVATLEAS PEVIESPPEI NTVQVTSTAV <b>HHHHHH</b>	<i>E. coli</i> BL21-expressed; [9]
<b>rALA</b>	MEQLTKCEVF RELKDLKGYG GVSLPEWVCT TFHTSGYDTQ AIVQNNSTE YGLFQINNKI WCKDDQNPBS SNICNISCDK FLDDDLTDDI MCVKKILDKV GINYWLAHKA LCSEKLDQWL CEKL <b>HHHHHH</b>	NCBI Reference Sequence: NP_776803.1 (mature protein w/o leader sequence), <i>E. coli</i> BL21- expressed; [34]
<b>rBSAF1</b>	MRGVFRRDTH KSEIAHRFKD LGEHFKGLV LIAFSQYLQQ CPFDEHVKL NELTEFAKTC VADESHAGCE KSLHTLFGDE LCKVASLRET YGDMA DCCEKQEPERNECFL SHKDDSPDLP KLKPDNTLC DEFKADEKKF WGKLYEIA RHPYFYAPEL LYYANKYNGV FQECCQAEDK GACLLPKIET MREKVLTS <b>HHHHHH</b>	AA 1 – 199 [GenBank: AAA51411.1]
<b>rBSAF2</b>	MARQLRCAS IQKFGERALK AWSVARLSQK FPKAEFVEVT KLVTDLTKVH KECCHGDLLE CADDRADLAK YICDNQDTIS SKLKECCDKP LLEKSHCIAE	AA 200 – 389 [GenBank: AAA51411.1]

	VEKDAIPENL PPLTADFAED KDVCKNYQEA KDAFLGSFLY EYSRRHPEYA VSVLLRLAKE YEATLEECCA KDDPHACYST VFDKLKHLVDE HHHHHH	
<b>rBSAF3</b>	MPQNLIKQNC DQFEKLGEYG FQNALIVRYT RKVPQVSTPT LVEVSRSLGK VGTRCCTKPE SERMPCTEDY LSLILNRLCV LHEKTPVSEK VTKCCTESLV NRRPCFSALT PDETYVPKAF DEKLFTFHAD ICTLPDTEKQ IKKQTALVEL LKHKPKATEE QLKTMENFV AFVDKCCAAD DKEACFAVEG PKLVVSTQTA LA HHHHHH	AA 390 – 591 [GenBank: AAA51411.1]
<b>Name</b>	<b>Peptides</b>	
<b>Cas1</b>	RPKHPIKHQG LPQEVLENENL LRFFVAPFPE VC	AA 2 - 32 + 1 Cys [33]
<b>Cas2</b>	FGKEKVNELS KDIGSESTED QAMEDIKQME AESC	AA 33 - 65 + 1 Cys [33]
<b>Cas3</b>	ISSSEEIVPN SVEQKHIQKE DVPSERYLGY EQLLRC	AA 34 - 95, 97-101 + 1 Cys [33]
<b>Cas4</b>	CLKKYKVPQL EIVPNSAEER LHSMKEGIHA QQKE	1 Cys + AA 102 – 134 [33]
<b>Cas5</b>	CPMIGVNQEL AYFYPELFRQ FYQLDAYPSG AWYYV	1 Cys + AA 135 – 168 [33]
<b>Cas6</b>	PLGTQYTDAP SFS DIPNPIG SENSEKTTMP LWC	AA 169 – 200 + 1 Cys [33]
<b>Casb1</b>	HQPHQPLPPT V	AA 146 – 156 [GenBank: XP_005902099.2]
<b>Casb2</b>	VYPFPGPIPN	AA 60 – 69 [GenBank: XP_005902099.2]
<b>Casb3</b>	LSSSEE	AA 17 – 21 [GenBank: XP_005902099.2]
<b>Casb4</b>	PVVVPPFL	AA 82 – 89 [GenBank: XP_005902099.2]
<b>Lac1</b>	EQLTKCEVFR ELKDLKGYG	AA 2 – 20 [34]
<b>Lac2</b>	LKGYGGSVSLP EWWCTTFHT S	AA 16 – 35 [34]
<b>Lac3</b>	TFHTSGYDTQ AIVQNNDSTE	AA 31 – 50 [34]
<b>Lac4</b>	NDSTEYGLFQ INNKIWCKDD	AA 46 – 65 [34]
<b>Lac5</b>	WCKDDQNPHS SNICNISCDK	AA 61 – 80 [34]
<b>Lac6</b>	ISCDKFLDDD LTDDIMCVKK	AA 76 – 95 [34]
<b>Lac7</b>	MCVKKILDKV GINYWLAHKA	AA 91 – 110 [34]
<b>Lac8</b>	LAHKALCSEK LDQWLCEKL	AA 106 – 124 [34]
<b>BLG1</b>	LIVTQTMKGL DIQKVA	AA 2 – 17 [GenBank: CAA32835.1]
<b>BLG2</b>	IQKVAGTWYS LAMAASDISL	AA 13 – 32 [GenBank: CAA32835.1]
<b>BLG3</b>	SDISLLDAQS APLRVYVEEL	AA 28 – 47 [GenBank: CAA32835.1]
<b>BLG4</b>	YVEELKPTPE GDLEILLQKW	AA 43 – 62 [GenBank: CAA32835.1]

<b>BLG5</b>	LLQKWENGEC AQKKIAEKT	AA 58 – 77 [GenBank: CAA32835.1]
<b>BLG6</b>	IAEKTIPAV FKIDALNENK	AA 73 – 92 [GenBank: CAA32835.1]
<b>BLG7</b>	LNENKVLVD TDYKYYLLFC	AA 88 – 107 [GenBank: CAA32835.1]
<b>BLG8</b>	YLLFCMENZA EPEQSLACQC	AA 103 – 122 [GenBank: CAA32835.1]
<b>BLG9</b>	LACQCLVRTP EVDDEALEKF	AA 118 – 137 [GenBank: CAA32835.1]
<b>BLG9iso</b>	LVCQCLVRTP EVDDEALEKF	AA 123 – 142 [GenBank: CAA32835.1]
<b>BLG10</b>	ALEKFDKALK ALPMHIRLSF	AA 133 – 152 [GenBank: CAA32835.1]
<b>BLG11</b>	IRLSFNPTQL EEQCHI	AA 148 – 163 [GenBank: CAA32835.1]

#### References :

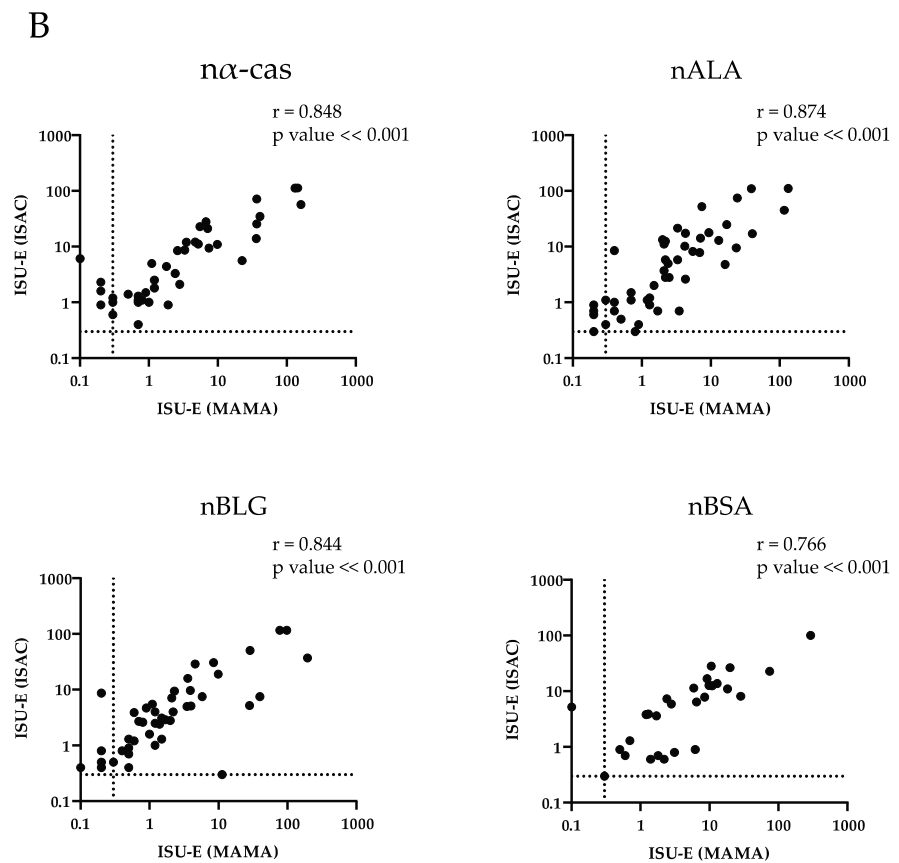
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**Table S2.** Detailed statistical analysis of differences of median IgE levels specific for CM allergens and CM allergen-derived peptides in patients with anaphylaxis according Sampson's criteria 4-5 (A4-5 patients), with anaphylaxis according to Sampson's criteria 1-3 (A1-3 patients) and without anaphylaxis (NA patients). Highly significant differences (p-value <0.01) are indicated in red.

Allergen	Without anaphylaxis (n=20)	Sampson 1-3 (n=21)	Sampson 4-5 (n=20)	p-value (<0.01)			p-value (<0.001)		
				A1-3 vs A4-5	A1-3 vs NA	A 4-5 vs NA	A1-3 vs A4-5	A1-3 vs NA	A4-5 vs NA
n $\alpha$ -cas	0.214 [0.117; 0.995]	0.281 [0.092; 2.168]	4.342 [1.324; 36.483]	.000	.602	.000	.000	.602	.000
r $\alpha$ S1-cas	0.106 [0.052; 0.676]	0.260 [0.043; 2.169]	3.956 [0.945; 32.265]	.000	.434	.000	.000	.434	.000
r $\alpha$ S2-cas	0.027 [0.004; 0.136]	0.137 [0.012; 2.824]	1.346 [0.359; 8.271]	.032	.067	.000	.032	.067	.000
n $\beta$ -cas	0.067 [0.012; 0.369]	0.086 [0.024; 1.428]	3.546 [0.609; 19.604]	.000	.657	.000	.000	.657	.000
r $\beta$ -cas	0.019 [0.005; 0.203]	0.035 [0.006; 0.632]	3.283 [0.312; 26.105]	.000	.473	.000	.000	.473	.000
n $\kappa$ -cas	0.143 [0.055; 0.607]	0.267 [0.033; 1.664]	4.331 [1.562; 23.495]	.000	.611	.000	.000	.611	.000
r $\kappa$ -cas	0.079 [0.035; 0.244]	0.107 [0.016; 0.282]	2.243 [0.36; 10.327]	.000	.990	.000	.000	.990	.000
nALA	0.359 [0.156; 2.978]	0.693 [0.294; 2.893]	4.743 [1.75; 21.812]	.001	.211	.000	.001	.211	.000
rALA	0.087 [0.036; 0.645]	0.274 [0.063; 0.565]	1.533 [0.337; 7.892]	.003	.155	.000	.003	.155	.000
nBLG	0.488 [0.116; 1.278]	0.565 [0.147; 1.596]	3.564 [0.983; 23.515]	.003	.584	.000	.003	.584	.000
nLf	0.020 [0.007; 0.178]	0.027 [0; 0.099]	0.027 [0.006; 0.097]	.743	.628	.882	.743	.628	.882
nBSA	0.301 [0.064; 1.595]	0.478 [0.036; 6.313]	1.489 [0.107; 16.36]	.206	.979	.185	.206	.979	.185
rBSAF1	0.000 [0; 0.054]	0.009 [0; 0.162]	0.038 [0; 0.802]	.192	.385	.059	.192	.385	.059
rBSAF2	0.029 [0.004; 0.069]	0.038 [0; 0.355]	0.039 [0.008; 0.632]	.386	.793	.232	.386	.793	.232
rBSAF3	0.012 [0; 0.151]	0.027 [0.005; 0.288]	0.202 [0.017; 1.015]	.200	.332	.029	.200	.332	.029
Cas1	0.047 [0.001; 0.5]	0.037 [0; 1.74]	1.862 [0.475; 37.174]	.002	.625	.000	.002	.625	.000
Cas2	0.029 [0.005; 0.113]	0.031 [0; 1.001]	1.104 [0.247; 9.616]	.001	.793	.000	.001	.793	.000
Cas3	0.156 [0.035; 0.527]	0.286 [0.003; 2.577]	3.935 [1.173; 22.042]	.002	.794	.000	.002	.794	.000
Cas4	0.077 [0.005; 0.556]	0.200 [0; 1.434]	4.460 [0.771; 26.506]	.000	.753	.000	.000	.753	.000
Cas5	0.000 [0; 0]	0.000 [0; 0]	0.000 [0; 0.009]	.003	.311	.016	.003	.311	.016

Cas6	0.027 [0.006; 0.488]	0.111 [0.011; 1.502]	4.132 [0.516; 23.649]	.001	.375	.000	.001	.375	.000
Casb1	0.004 [0.002; 0.005]	0.002 [0; 0.003]	0.003 [0.002; 0.004]	.111	.026	.507	.111	.026	.507
Casb2	0.004 [0.001; 0.01]	0.012 [0; 0.048]	0.047 [0.006; 1.41]	.039	.416	.002	.039	.416	.002
Casb3	0.000 [0; 0]	0.000 [0; 0.002]	0.000 [0; 0.004]	.823	.226	.196	.823	.226	.196
Casb4	0.001 [0; 0.004]	0.000 [0; 0.002]	0.001 [0; 0.012]	.420	.576	.719	.420	.576	.719
Lac1	0.000 [0; 0.017]	0.000 [0; 0.255]	0.094 [0.009; 0.567]	.143	.166	.001	.143	.166	.001
Lac2	0.000 [0; 0.001]	0.000 [0; 0.027]	0.002 [0; 0.024]	.250	.593	.069	.250	.593	.069
Lac3	0.000 [0; 0.002]	0.000 [0; 0.002]	0.000 [0; 0.002]	.933	.406	.464	.933	.406	.464
Lac4	0.004 [0; 0.014]	0.000 [0; 0.01]	0.000 [0; 0.012]	.899	.275	.321	.899	.275	.321
Lac5	0.040 [0; 0.07]	0.000 [0; 0.07]	0.000 [0; 0.072]	.656	.344	.103	.656	.344	.103
Lac6	0.000 [0; 0]	0.000 [0; 0.027]	0.000 [0; 0.004]	.206	.082	.657	.206	.082	.657
Lac7	0.000 [0; 0.022]	0.000 [0; 0.014]	0.000 [0; 0]	.255	.712	.182	.255	.712	.182
Lac8	0.000 [0; 0.013]	0.000 [0; 0.008]	0.000 [0; 0.012]	.859	1.000	.852	.859	1.000	.852
BLG1	0.000 [0; 0.004]	0.000 [0; 0.005]	0.000 [0; 0.01]	.493	.953	.548	.493	.953	.548
BLG2	0.001 [0; 0.003]	0.002 [0; 0.007]	0.004 [0; 0.007]	.744	.296	.109	.744	.296	.109
BLG3	0.000 [0; 0.001]	0.000 [0; 0.002]	0.001 [0; 0.006]	.521	.296	.103	.521	.296	.103
BLG4	0.020 [0.002; 0.092]	0.072 [0; 0.674]	0.922 [0.024; 3.544]	.020	.415	.003	.020	.415	.003
BLG5	0.021 [0; 0.076]	0.000 [0; 0.029]	0.000 [0; 0.008]	.275	.107	.018	.275	.107	.018
BLG6	0.004 [0; 0.026]	0.008 [0; 0.422]	0.059 [0.014; 0.46]	.053	1.000	.009	.053	1.000	.009
BLG7	0.000 [0; 0.009]	0.000 [0; 0.004]	0.000 [0; 0.011]	.697	.635	.557	.697	.635	.557
BLG8	0.000 [0; 0.001]	0.001 [0; 0.003]	0.001 [0; 0.011]	.874	.078	.122	.874	.078	.122
BLG9	0.000 [0; 0.003]	0.002 [0; 0.039]	0.058 [0; 2.366]	.044	.128	.002	.044	.128	.002
BLG9iso	0.000 [0; 0.001]	0.00 [0; 0]	0.000 [0; 0.003]	.525	.411	.899	.525	.411	.899
BLG10	0.003 [0.001; 0.005]	0.005 [0.002; 0.043]	0.032 [0.007; 0.312]	.060	.026	.000	.060	.026	.000
BLG11	0.000 [0; 0.01]	0.004 [0; 0.23]	0.006 [0; 3.465]	.336	.178	.027	.336	.178	.027

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**Figure S1.** Heat map (A) and correlation (B) of IgE levels (ISU-E) specific for cow's milk allergen molecules (n $\alpha$ -cas, nAla, nBLG, nBSA) as determined by MAMA (x-axes) versus ImmunoCAP ISAC (y-axes).