

**Supplementary Table 1 Associated disease in children with cow's milk protein allergy, *n* (%)**

Associated disease <sup>1</sup>	Total, <i>n</i> = 595 (100)	IgE-mediated, <i>n</i> = 135 (22.7)	Non-IgE-mediated, <i>n</i> = 460 (77.3)	<i>P</i> value <sup>a</sup>
Bronchial asthma	64 (10.8)	14 (10.4)	50 (10.9)	1.000
G6PD	48 (8.1)	8 (5.9)	40 (8.7)	0.370
Other food allergy	46 (7.7)	21 (15.6)	25 (5.4)	< 0.001
Sickle cell trait	23 (3.9)	6 (4.4)	17 (3.7)	0.621
Alpha thalassemia	20 (3.4)	7 (5.2)	13 (2.8)	0.181
Glucose-6-phosphate dehydrogenase deficiency	19 (3.2)	8 (5.9)	11 (2.4)	0.051
Hypoxic-ischemic encephalopathy	12 (2.0)	6 (4.4)	6 (1.3)	0.034
Congenital heart disease	9 (1.5)	3 (2.2)	6 (1.3)	0.432
Autism	6 (1.0)	3 (2.2)	3 (0.7)	0.134
Down syndrome	4 (0.7)	1 (0.7)	3 (0.7)	1.000
Cystic fibrosis	4 (0.7)	4 (3.0)	0 (0.0)	0.003
Cholestatic jaundice	4 (0.7)	1 (0.7)	3 (0.7)	1.000
Seizure	3 (0.5)	1 (0.7)	2 (0.4)	0.539
Allergic rhinitis	3 (0.5)	0 (0.0)	3 (0.7)	1.000
Hearing loss	3 (0.5)	0 (0.0)	3 (0.7)	1.000
Others <sup>2</sup>	54 (9.1)	15 (11.1)	39 (8.5)	0.394

Data are presented as number and percentage or median and interquartile range. Boldface indicates a statistically significant difference with  $P < 0.05$ .

<sup>a</sup>Fisher's exact test.

<sup>1</sup>Some patients had more than one associated disease.

<sup>2</sup>Drug allergy ( $n = 3$ ), rickets, cleft palate, necrotizing enterocolitis, Hirschsprung

disease, hypothyroidism, mitochondrial disease, seborrheic dermatitis, neutropenia ( $n = 2$  each), eosinophilic esophagitis, helicobacter pylori infection, celiac disease, congenital chloride diarrhea, lactase deficiency, meconium ileus with ileostomy, duodenal atresia, jejunal atresia, nodular lymphoid hyperplasia, imperforated anus, attention deficit hyperactive disorder, autosomal dominant intellectual disorder, brain malformation, degenerative brain disease, meningioma, post meningitis hydrocephalus, neurogenetic disease, spina bifida, strabismus, 3 M syndrome, Bartter syndrome, CHARGE syndrome, Dubin-Johnsen syndrome, Prune belly syndrome, WWOX gene mutation, 3-methylglutaconic aciduria, high acylcarnitine, homocystinuria, mild metabolic acidosis, galactosemia, nephrocalcinosis, pelvi-ureteric junction obstruction, hypospadias, repaired inguinal hernia, hemoglobin D disease, severe combined immunodeficiencies, cardiomyopathy, aortic insufficiency, pulmonary stenosis, albinism, bilateral tibial deformity, micrognathia ( $n = 1$  each).

IgE: Immunoglobulin E.

**Supplementary Table 2 Laboratory investigation of children with cow's milk protein allergy**

Laboratory investigations	Total tested, $n$ = 595 (100)	Normal range	Results	IgE-mediate d, $n = 135$ (22.7)	Non-IgE-mediate d, $n = 460$ (77.3)	$P$ value
White blood cells ( $\times 10^9/L$ )	477 (80.2)	3.6-9.6	9.2 (7.2-10.9)	9.0 (6.5-11.6)	9.2 (7.3-10.9)	0.638 <sup>a</sup>
Hemoglobin (g/dL)	563 (94.6)	12.0-14.5	11.1 (10.3-11.9)	11.1 (10.3-11.9)	11.1 (10.3-12.0)	0.877 <sup>a</sup>
Hematocrit	476 (80.0)	33-45.7	34.6 (32.1-37.3)	34.9 (32.7-37.8)	34.5 (31.8-37.2)	0.234 <sup>a</sup>
Mean corpuscular	484 (81.3)	80-97	75.9 (68.3-82.4)	75.8 (68.5-80.9)	75.9 (68.3-82.7)	0.466 <sup>a</sup>

volume (fL)						
Mean	484 (81.3)	27-33	24.5	24.0	24.6 (21.2-26.6)	0.186 <sup>a</sup>
corpuscular hemoglobin (pg)			(21.3-26.6)	(21.4-26.1)		
Platelets (× 10 <sup>9</sup> /L)	483 (81.2)	150-400	390 (302-501)	378 (304-506)	393 (302-500)	0.525 <sup>a</sup>
Eosinophils	476 (80.0)	1.7-9.3	2.7 (1.6-4.6)	3.2 (1.8-4.8)	2.7 (1.5-4.5)	0.347 <sup>a</sup>
Albumin (g/L)	223 (37.5)	38-54	42 (39-44)	42 (39-44)	42 (39-44)	0.885 <sup>a</sup>
Alkaline phosphatase (U/L)	368 (61.8)	150-420	268.5 (213.0-353.0)	273.0 (221.0-354.0)	276.0 (211.0-351.0)	0.549 <sup>a</sup>
Calcium (mmol/L)	320 (53.2)	2.25-2.75	2.5 (2.4-2.6)	2.5 (2.4-2.5)	2.5 (2.4-2.6)	< 0.001 <sup>a</sup>
Phosphorus (mmol/L)	332 (53.7)	1.15-2.15	1.9 (1.7-2.1)	1.8 (1.7-2.0)	1.9 (1.8-2.1)	0.012 <sup>a</sup>
Iron (µmol/L)	279 (46.9)	11.6-313	10 (7-13)	11 (8-14)	10 (6-13)	0.135 <sup>a</sup>
Ferritin (ng/mL)	69 (11.6)	Range <sup>1</sup>	44.9 (21.6-70.9)	31.4 (19.9-52.5)	46.6 (22.9-79.0)	0.197 <sup>a</sup>
Vitamin D (nmol/L)	271 (45.5)	≥ 50	62.0 (43.0-82.0)	64.0 (47.0-79.0)	60.5 (43.0-83.0)	0.912 <sup>a</sup>
Milk-specific IgE (kU/L) (quantitative)	155 (26.1)	Range <sup>2</sup>	8.5 (2.7-24.1)	16.7 (8.3-39.9)	1.9 (1.9-3.2)	< 0.001 <sup>a</sup>
Positive milk-specific	196 (32.9)	Negative	47 (24.0)	47 (92.2)	0.0 (0.0)	< 0.001 <sup>b</sup>

IgE

(qualitative)

Data are presented as number and percentage or median and interquartile range.

Boldface indicates a statistically significant difference with  $P < 0.05$ .

<sup>a</sup>Mann-Whitney  $U$  test.

<sup>b</sup>Fisher's exact test.

<sup>1</sup>Ferritin level varies according to the age: 145-458 days (1-7 days) and 52-421 months (2-5 months).

<sup>2</sup>Immunoglobulin E level varies according to the age: 0.6-2.3 weeks (6 weeks), 1.0-4.1 months (3 months), 1.8-7.3 months (6 months), 2.6-10 months (9 months), 3.2-13 years (1 year), 5.7-23 years (2 years), and 8-32 years (3 years).

IgE: Immunoglobulin E.

**Supplementary Table 3 Stool analysis of children with cow's milk protein allergy**

Stool analysis	Total, $n = 298$ (50.1)	IgE-mediated, $n = 135$ (22.7)	Non-IgE-mediated, $n = 460$ (77.3)	$P$ value <sup>a</sup>
Stool color				
Brown	139 (46.6)	37 (46.3)	102 (47.0)	1.000
Yellow	87 (29.2)	28 (35.0)	59 (27.1)	0.197
Green	67 (22.5)	14 (17.5)	53 (24.3)	0.273
Gray	3 (1.0)	0 (0.0)	3 (1.4)	0.567
Black	2 (0.7)	1 (1.3)	1 (0.5)	0.466
Stool consistency				1.000
Formed	220 (73.8)	59 (73.8)	161 (73.9)	
Unformed	78 (26.2)	21 (26.3)	57 (26.1)	
Stool red blood cells ( $n = 303$ )				0.292
Negative	255 (84.2)	66 (80.5)	189 (85.5)	
Positive	48 (15.8)	16 (19.5)	32 (14.5)	

Stool white blood cells ( <i>n</i> = 303)				0.355
Negative	236 (77.9)	67 (81.7)	169 (76.5)	
Positive	67 (22.1)	15 (18.5)	52 (23.5)	
Presence of occult blood ( <i>n</i> = 77)	17 (22.1)	4 (18.2)	13 (23.6)	0.764
Another stool finding				
Fat globules	32 (10.7)	9 (11.3)	23 (10.5)	0.835
Mucous	36 (12.1)	6 (7.5)	30 (13.8)	0.164

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Data are presented as number and percentage.

<sup>a</sup>Fisher's exact test.

IgE: Immunoglobulin E.