

Table S1. Control subject characteristics

ID	Age	Gender	CD19 <sup>+</sup> cells (% of lymphocytes)	CD19 <sup>+</sup> cells (cells/ $\mu$ l)	Serum IgE (IU/ml)
C01	32	female	12.7	287.0	71.8
C02	41	female	8.5	198.4	22.6
C03	49	female	7.5	188.8	85.2
C04	27	male	11.1	328.6	0.6
C05	48	female	5.3	165.0	0.7
C06	29	female	5.5	81.2	31.0
C07	29	female	10.1	192.6	66.3
C08	34	female	14.3	321.3	82.0
C09	28	female	6.2	121.4	111.0
C10	27	male	5.3	163.6	16.0
C11	33	male	7.5	106.7	15.4

Table S2. Antibodies used for immunohistochemistry

<b>Marker</b>	<b>Clone</b>	<b>Company</b>	<b>Detection system</b>
CD138	MI15	DAKO, Glostrup, Denmark	DAB
CD20	L26	DAKO, Glostrup, Denmark	DAB
CD21	2G9	Thermo scientific, Waltham, MA	DAB
CD3	SP7	Thermo scientific, Waltham, MA	DAB
CD38	MI15	Leica Biosystems	DAB
PD1	NAT105	Abcam, Cambridge, UK	DAB
IgM	rabbit polyclonal	DAKO, Glostrup, Denmark	DAB
IgA	rabbit polyclonal	DAKO, Glostrup, Denmark	DAB
IgG	rabbit polyclonal	DAKO, Glostrup, Denmark	DAB
IgG4	HP6025	Binding Site Immunologicals Group, Birmingham, UK	DAB
IgE	XTE4	Santa Cruz	AP
IgE	rabbit polyclonal	DAKO, Glostrup, Denmark	DAB

Table S3. Antibodies used for immunophenotyping and flow cytometric cell sorting

Marker	Clone	Fluorochrome	Company
CD19	H1B19	APC-Cy7	BioLegend, San Diego, CA
CD19	J3-119	PC7	Beckman Coulter, Brea, CA
CD27	M-T271	BV421	BioLegend, San Diego, CA
CD27	L128	BV510	BD Biosciences, San Jose, CA
CD27	O323	PE	BioLegend, San Diego, CA
IgM	MHM-88	PerCP-Cy5.5	BioLegend, San Diego, CA
IgM	MHM-88	BV510	BioLegend, San Diego, CA
IgD	IA6-2	FITC	BD Biosciences, San Jose, CA
IgD	IA6-2	PE-CF594	BD Biosciences, San Jose, CA
IgG	Goat polyclonal	Dylight-405	Jackson ImmunoResearch, West Grove, PA
IgG1	HP6188	PE*	Sanquin, Amsterdam, Netherlands
IgG2	HP6014	PE-Cy5.5*	Sanquin, Amsterdam, Netherlands
IgG3	HP6095	PC7*	Sanquin, Amsterdam, Netherlands
IgG4	RJ4	Dylight-405*	Abingdon Health, York, UK
IgE	Ige21	APC	Ebioscience, San Diego, CA
IgA	Goat polyclonal	Alexa Fluor 488	Jackson ImmunoResearch, West Grove, PA
CD38	HIT2	APC-Cy7	BioLegend, San Diego, CA
CD38	HB7	PC7	BioLegend, San Diego, CA
CD138	DL-101	APC	BioLegend, San Diego, CA
CD3	OKT3	Biotin	BioLegend, San Diego, CA
CD14	M5E2	Biotin	BioLegend, San Diego, CA
CD16	3G8	Biotin	BioLegend, San Diego, CA
FCεRI	AER-37 (CRA-1)	Biotin	BioLegend, San Diego, CA
CD235a	HIR2 (GA-R2)	Biotin	BioLegend, San Diego, CA
CD36	5-271	Biotin	BioLegend, San Diego, CA

\* Antibodies were in-house labeled with fluorochromes using lightning link labeling kits (Innova Biosciences, Cambridge, UK).