Table SI. Results of MBL genetic polymorphism testing

Analysis of the structural part of the gene; A = wild-type structural allele (normal), 0 = mutant allele B, C or D. Analysis of the promoter part of the gene; HY = normal, LY= intermediate, LX = low. Criteria for group 1 (low MBL) was either two structural allele mutations or one structural mutant allele + wild type structural allele A with an LX promoter mutation. Criteria for group 2 (intermediate MBL) was either two normal structural alleles, but promoter gene mutation LX on both genes or one structural mutant allele + a wild-type structural allele A with a non-LX promoter. Criteria for group 3 (MBL high) was two wild-type structural alleles with at least one promoter allele that is a non-LX-promoter.

MBL Genotype	***Patients n (%)***
Group 1 (MBL low)	
BLY BLY	4 (6.7)
ALX DHY	2 (3.3)
ALX CLY	1 (1.7)
ALX BLY	1 (1.7)
Group 2 (MBL intermediate)	
AHY BLY	10 (16.7)
ALX ALX	5 (8.3)
AHY DHY	3 (5)
ALY BLY	2 (3.3)
DHY ALY	1 (1.7)
ALY CLY	1 (1.7)
Group 3 (MBL high)	
ALY ALX	9 (15)
AHY ALX	8 (13.3)
AHY AHY	5 (8.3)
AHY ALY	5 (8.3)
ALY ALY	3 (5)

Table SII. Characteristics of the MBL genotypes groups

	Group 1 (low MBL) total *n*=8	Group 2 (inter-mediate MBL) total *n*=22	Group 3 (high MBL) total *n*=30
Women, *n* (%)	6 (75)	13 (59)	18 (60)
Men, *n* (%)	2 (25)	9 (41)	12 (40)
Age in years, median (range)	27 (21-64)	34.5 (21-73)	29.5 (19-69)
total IgE, kU/l, median (range)	1162.5 (3.6-3102)	372 (16-20220)	232.5 (8.51-13910)
lgE sensitization to *C. albicans, n (%)*	6 (75)	14 (63.6)	10 (33.3)
IgE sensitization *to S. aureus* enterotoxin A, *n* (%)	2 (25)	6 (27.3)	5 (16.7)
IgE sensitization to *S. aureus* enterotoxin B, *n* (%)	2 (25)	3 (13.6)	7 (23.3)
IgE sensitization to TSST, *n* (%)	2 (25)	4 (18.1)	6 (20)
lgE sensitization to *Malassezia, n* (%)	4 (50)	14 (63.6)	14 (46.7)
TEWL g/m^2/h median (range)	13.5 (8-18.8)	14.75 (6.5-80.9)	12.7 (2.6-32)
SCORAD median (range)	26 (14-44)	33.5 (6-85)	27 (1-75)
Head and neck dermatitis, *n* (%)	7 (87.5)	17 (77)	18 (60)

Table SIII. Difference between patients sensitized to other skin-associated microorganisms and non-sensitized patients in terms of MBL groups, SCORAD, sex, age and TEWL

Categorical variables presented as percentage continuous variables presented as mean (standard deviation). No difference was seen between the different MBL genotypes regarding sensitization to other skin microbes.

Microbe			**p-value**
SEA	**Patients not sensitized to *S. aureus* enterotoxin A**	**Patients sensitized to *S. aureus* enterotoxin A**	
MBL genotype			0.637
Group 1 (low MBL)	25.00 (2/8)	75.00 (6/8)	
Group 2 (intermediate MBL)	72.73 (16/22)	27.27 (6/22)	
Group 3 (high MBL)	83.33 (25/30)	16.67 (5/30)	
SCORAD			0.002
< 25	100.00 (24/24)	0 (0/24)	
25-50	71.43 (15/21)	28.57 (6/21)	
50<	53.33 (8/15)	46.67 (7/15)	
Sex			0.991
Female	78.38 (29/37)	21.62 (8/37)	
Male	78.26 (18/23)	21.74 (5/23)	
Age	33.19 (13.69)	39.31 (13.73)	0.160
TEWL	15.70 (9.26)	24.42 (18.62)	0.022
SEB	**Patients not sensitized to *S. aureus* enterotoxin B**	**Patients sensitized to *S. aureus* enterotoxin B**	
MBL genotype			0.641
Group 1 (low MBL)	25.00 (2/8)	75.00 (6/8)	
Group 2 (intermediate MBL)	86.36 (19/22)	13.64 (3/22)	
Group 3 (high MBL)	76.67 (23/30)	23.33 (7/30)	
SCORAD			0.021
< 25	95.83 (23/24)	4.17 (1/24)	
25-50	76.19 (16/21)	23.81 (5/21)	
50<	60.00 (9/15)	40.00 (6/15)	
Sex			0.353
Female	83.78 (31/37)	16.22 (6/37)	
Male	73.91 (17/23)	26.09 (6/23)	
Age	33.44 (13.21)	38.83 (15.90)	0.229
TEWL	16.80 (9.90)	20.76 (19.36)	0.321

TSST	Patients not sensitized to toxic shock syndrome toxin (TSST)	Patients sensitized to toxic shock syndrome toxin (TSST)	
MBL genotype			0.918
Group 1 (low MBL)	25.00 (2/8)	75.00 (6/8)	
Group 2 (intermediate MBL)	81.82 (18/22)	18.18 (4/22)	
Group 3 (high MBL)	80.00 (24/30)	20.00 (6/30)	
SCORAD			0.081
< 25	87.50 (21/24)	12.50 (3/24)	
25-50	85.71 (18/21)	14.29 (3/21)	
50<	60.00 (9/15)	40.00 (6/15)	
Sex			0.791
Female	81.08 (30/37)	18.92 (7/37)	
Male	78.26 (18/23)	21.74 (5/23)	
Age	34.23 (13.53)	35.67 (15.50)	0.750
TEWL	16.82(9.84)	20.69(19.50)	0.332
Malassezia	**Patients not sensitized to *Malassezia***	**Patients sensitized to *Malassezia***	
MBL genotype			0.430
Group 1 (low MBL)	37.50 (3/8)	62.50 (5/8)	
Group 2 (intermediate MBL)	36.36 (8/22)	63.64 (14/22)	
Group 3 (high MBL)	53.33 (16/30)	46.67 (14/30)	
SCORAD			0.003
< 25	70.83 (17/24)	29.17 (7/24)	
25-50	33.33 (7/21)	66.67 (14/21)	
50<	20.00 (3/15)	80.00 (12/15)	
Sex			0.729
Female	43.24 (16/37)	56.76 (21/37)	
Male	47.83 (11/23)	52.17 (12/23)	
Age	32.59 (12.60)	36.09 (14.74)	0.334
TEWL	15.36(8.75)	19.41(14.41)	0.206

SEA = *S aureus* enterotoxin A, SEB = S aureus enterotoxin B, TSST= Toxic shock syndrome toxin

Table SIV. Total IgE and levels of specific IgE to C. albicans, SEA, SEB, TSST and Malassezia

Sensitization to skin microbes analysed by ImmunoCap. Class 0/negative: <0.35 kU/L, Class 1: 0.35-0.7 kU/L, Class 2: 0.7-3.5 kU/L, Class 3: 3.5-17.5 kU/L, Class 4: 17.5-50 kU/L, Class 5: 50-100, Class 6: >100 kU/L.

Patient Study Number	Total IgE	IgE Candida	IgE SEA	IgE SEB	IgE TSST	IgE Malas	Serum MBL	MBL gene Polymorphism	MBL genotype group
1	163	0,49	0,10	0,10	0,10	11,00	810	AHY ALX	3
2	121	0,10	0,10	0,10	0,10	0,10	3640	AHY ALX	3
3	21,5	0,35	0,10	0,10	0,10	0,10	24	ALX DHY	1
4	1482	10,10	0,54	0,69	1,11	0,20	73	AHY BLY	2
5	4151	13,20	0,18	0,12	0,16	65,40	520	ALX ALX	2
6	86,5	0,10	0,10	0,10	0,11	0,10	1200	ALY ALX	3
7	3102	10,40	0,35	0,23	0,17	100,00	6	BLY BLY	1
8	2196	0,49	0,54	0,16	0,32	6,57	110	ALY CLY	2
9	2780	0,94	0,25	0,10	0,10	4,25	1330	AHY AHY	3
10	4320	3,03	1,11	1,35	0,60	16,60	1170	AHY DHY	2
11	14,9	0,10	0,10	0,10	0,10	0,10	2730	AHY ALY	3
12	830	49,50	0,25	0,16	0,23	3,83	3200	ALX ALX	2
13	367	4,16	0,10	0,18	0,10	2,71	330	ALY ALX	3
14	105	0,30	0,10	0,10	0,10	0,16	2360	AHY ALX	3
15	644	0,10	0,10	0,10	0,57	0,27	3360	ALY ALY	3
16	8130	16,30	11,60	3,02	1,22	84,50	3390	AHY ALY	3
17	58,5	0,10	0,10	0,10	0,10	0,10	230	AHY BLY	2
18	454	4,66	0,10	0,10	0,10	8,04	470	ALX ALX	2
19	224	0,74	0,10	0,10	0,12	6,56	2390	AHY ALY	3
20	2278	5,02	0,66	0,84	0,16	22,10	10	ALX BLY	1
21	278	2,63	0,10	0,13	0,19	0,95	490	ALX ALX	2
22	347	0,39	0,19	0,10	0,10	2,97	980	ALY ALY	3
23	16,8	0,10	0,10	0,10	0,10	0,10	1340	AHY ALX	3
24	13910	1,17	0,78	0,55	0,67	1,87	2000	AHY ALX	3
25	352	0,97	0,16	0,10	0,20	22,30	140	AHY BLY	2
26	3.63	0,10	0,10	0,10	0,10	0,10	8	BLY BLY	1
27	457	0,24	0,20	0,10	0,10	0,15	4050	ALY ALX	3
28	4816	1,57	1,30	4,10	2,33	7,37	2350	ALY ALX	3
29	33	0,10	0,10	0,10	0,11	0,10	190	ALY ALX	1

30	529	0,22	0,20	0,68	0,13	0,10	2350	AHY AHY	3
31	3477	2,42	0,43	0,54	2,26	40,20	1320	AHY ALY	3
32	80,5	0,14	0,10	0,10	0,10	1,12	1740	ALY ALX	3
33	698	4,77	1,46	0,13	2,16	42,00	290	AHY BLY	2
34	27,7	0,10	0,10	0,10	0,10	0,10	6000	ALY ALY	3
35	55,1	0,10	0,10	0,10	0,10	0,10	6000	ALY ALX	3
36	316	0,10	0,10	0,10	0,10	0,10	6	AHY BLY	2
37	61,7	2,97	0,10	0,10	0,10	1,68	96	AHY BLY	2
38	392	0,95	0,10	0,10	0,11	1,84	70	AHY BLY	2
39	3418	8,65	3,02	1,18	0,23	47,2	6000	AHY AHY	3
40	309	0,10	0,10	0,10	0,10	0,10	980	ALY BLY	2
41	224	0,10	0,11	0,10	0,10	2,87	520	AHY BLY	2
42	108	0,19	0,10	0,10	0,10	0,10	2700	ALY ALX	3
42	63	0,10	0,10	0,10	0,10	0,10	690	AHY DHY	2
43	20220	4,04	3,11	2,17	12,8	6,73	1150	AHY DHY	2
44	10,2	0,10	0,10	0,10	0,10	0,10	1680	ALY ALX	3
45	241	0,10	0,10	0,10	0,10	0,10	6000	AHY ALX	3
46	380	0,19	0,10	0,10	0,15	0,45	6000	AHY AHY	3
47	805	0,20	0,10	0,25	0,51	0,75	660	AHY ALX	3
48	706	2,58	0,10	3,46	0,10	29,3	6000	AHY ALY	3
49	102	2,54	0,10	0,20	0,13	4,24	5,61	BLY BLY	1
50	16	0,10	0,10	0,10	0,10	0,10	430	DHY ALY	2
51	37	0,10	0,10	0,10	0,10	0,10	3000	AHY AHY	3
52	8,51	0,10	0,10	0,10	0,10	0,10	780	AHY ALX	3
53	1135	0,98	0,26	0,12	0,41	3,26	10	BLY BLY	1
54	33,3	0,10	0,10	0,10	0,10	0,10	720	ALY ALX	3
56	2823	3,09	0,43	0,11	0,10	43,00	91	ALY BLY	2
57	1190	4,83	0,25	0,47	0,94	20,20	11	ALX CLY	1
58	26,8	0,10	0,10	0,10	0,10	0,10	2340	ALX ALX	2
59	125	0,10	0,10	0,10	0,12	0,10	210	AHY BLY	2
60	977	0,91	0,16	0,10	0,10	2,04	340	AHY BLY	2

Candida = *C. albicans*, SEA= Staphylococcal enterotoxin A, SEB= Staphylococcal enterotoxin B, TSST= Toxic shock syndrome toxin, Malas= *Malassezia*. MBL genotypes categorized as 1= Group 1 (low MBL), 2= Group 2 (intermediate MBL) and 3= Group 3 (high MBL).