

Supplementary material

Table S1. Patients' clinical data.

AP (n=141)	
<i>Routine blood biomarkers</i>	
Glucose (mg/dL)	136 (115-168)
Urea (mg/dL)	27 (19-33)
Creatinine (mg/dL)	0.79 (0.67-0.92)
<i>Arterial blood gas test</i>	
pH	7.41 (7.39-7.44)
pCO ₂	29.3 (26.3-33.0)
pO ₂	53.0 (48.2-62.2)
SatO ₂	86.0 (82.0-98.0)
HCO ₃ ⁻	18.7 (16.7-20.6)

Median and interquartile range (IR 25–75) are presented for all the variables. pH: Hydrogen potential. pCO₂: partial pressure CO₂. pO₂: Partial pressure Oxygen, SatO₂: Oxygen saturation. HCO₃⁻: Bicarbonate.

Table S2. Genetic association between SNPs and clinical data.

Gene/SNP	Rhinitis (n=52)	No rhinitis (n=80)	p	OR	CI (95%)
	GF (%)	GF (%)			
IL13 rs20541					
GG	22 (42.3)	33 (41.3)	0.33	1.0 (Ref)	
GA	23 (44.3)	42 (52.5)		0.81	0.39-1.72
AA	7 (13.4)	5 (6.2)		2.1	0.59-7.46
IL13 rs1800925					
CC	26 (50.0)	39 (48.8)	0.87	1.0 (Ref)	
CT	21 (40.4)	31 (38.7)		1.03	0.47-2.13
TT	5 (9.6)	10 (12.5)		0.74	0.23-2.43
IL4 rs2070874					
TT	16 (30.8)	24 (30.0)	0.82	1.0 (Ref)	
TC	26 (50.0)	37 (46.2)		1.05	0.47-2.36
CC	10 (19.2)	19 (23.8)		0.79	0.29-2.13
Gene/SNP	Dermatitis (n=6)	No dermatitis (n=126)	p	OR	CI (95%)
	GF (%)	GF (%)			
IL13 rs20541					
GG	3 (50.0)	52 (41.3)	0.72	1.0 (Ref)	
GA	3 (50.0)	62 (49.2)		0.84	0.16-4.33
AA	0	12 (9.5)		NA	NA
IL13 rs1800925					
CC	3 (50.0)	62 (49.2)	0.9	1.0 (Ref)	
CT	2 (48.3)	50 (39.7)		0.79	0.13-4.90
TT	1 (1.7)	14 (11.1)		1.31	0.14-4.52
IL4 rs2070874					
TT	1 (1.7)	34 (26.9)	0.18	1.0 (Ref)	
TC	5 (98.3)	58 (46.2)		2.93	0.33-26.15
CC	0	34 (26.9)		NA	NA
Gen/SNP	Allergies (n=34)	No allergies (n=98)	p	OR	CI (95%)
	GF (%)	GF (%)			
IL13 rs20541					
GG	11 (32.4)	44 (44.9)	0.41	1.0 (Ref)	
GA	20 (58.8)	45 (45.9)		1.78	0.76-4.14
AA	3 (8.8)	9 (9.2)		1.33	0.31-5.77
IL13 rs1800925					
CC	19 (55.9)	46 (46.9)	0.32	1.0 (Ref)	
CT	10 (29.4)	42 (42.9)		0.54	0.22-1.29
TT	5 (14.7)	10 (10.2)		1.13	0.34-3.76
IL4 rs2070874					
TT	13 (38.2)	22 (22.4)	0.16	1.0 (Ref)	
TC	15 (44.1)	48 (48.9)		0.53	0.22-1.30
CC	6 (17.7)	28 (28.6)		0.36	0.12-1.11

Genotype frequencies were compared by Fisher's exact test. For statistical significance was considered a $p < 0.05$. Ref: Genotype employed as a reference for statistical analysis.

CI: Confidence intervals. OR: Odds ratio. NA: Not apply.

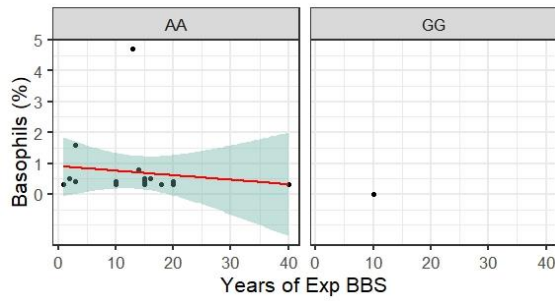
Table S3. Genetic association between SNPs and clinical data.

Total leukocytes					
Gene/SNP	Normal (n=73)	High (n=52)	p	OR	CI (95%)
	GF (%)	GF (%)			
IL13 rs20541					
GG	29 (39.7)	24 (46.2)	0.41	1.0 (Ref)	
GA	39 (53.4)	22 (42.3)		1.47	0.69-3.11
AA	5 (6.9)	6 (11.5)		0.69	0.19-2.54
IL13 rs1800925					
CC	35 (47.9)	26 (50.0)	0.08	1.0 (Ref)	
CT	33 (45.2)	17 (32.7)		1.57	0.71-3.49
TT	5 (6.9)	9 (17.3)		0.4	0.12-1.33
IL4 rs2070874					
TT	20 (27.4)	13 (25.0)	0.87	1.0 (Ref)	
TC	35 (47.9)	24 (46.2)		0.95	0.40-2.26
CC	18 (27.7)	15 (28.8)		0.78	0.29-2.08
Neutrophils					
Gene/SNP	High (n=90)	Normal (n=35)	p	OR	CI (95%)
	GF (%)	GF (%)			
IL13 rs20541					
GG	40 (44.4)	13 (37.1)	0.68	1.0 (Ref)	
GA	41 (45.6)	19 (54.3)		0.7	0.31-1.61
AA	9 (10.0)	3 (8.6)		0.98	0.23-4.15
IL13 rs1800925					
CC	42 (46.7)	18 (51.4)	0.7	1.0 (Ref)	
CT	36 (40.0)	12 (34.3)		1.29	0.55-3.02
TT	9 (10.0)	5 (14.3)		0.77	0.23-2.63
IL4 rs2070874					
TT	23 (25.6)	10 (28.6)	0.6	1.0 (Ref)	
TC	41 (45.6)	18 (51.4)		0.99	0.39-2.50
CC	26 (28.9)	7 (20.0)		1.62	0.53-4.94
Lymphocytes					
Gene/SNP	High (n=109)	Normal (n=16)	p	OR	CI (95%)
	GF (%)	GF (%)			
IL13 rs20541					
GG	47 (43.1)	6 (37.5)	0.82	1.0 (Ref)	
GA	53 (48.6)	8 (50.0)		0.85	0.27-2.61
AA	9 (8.3)	2 (12.5)		0.57	0.09-3.31
IL13 rs1800925					
CC	51 (46.8)	9 (56.2)	0.39	1.0 (Ref)	
CT	43 (39.5)	4 (25.0)		1.89	0.54-6.59
TT	11 (10.1)	3 (18.8)		0.64	0.15-2.78
IL4 rs2070874					
TT	30 (27.5)	3 (18.8)	0.73	1.0 (Ref)	
TC	50 (45.9)	8 (50.0)		0.62	0.15-2.53
CC	28 (25.7)	5 (31.2)		0.56	0.12-2.56
Eosinophils					
Gene/SNP	High (n=62)	Normal (n=36)	p	OR	CI (95%)

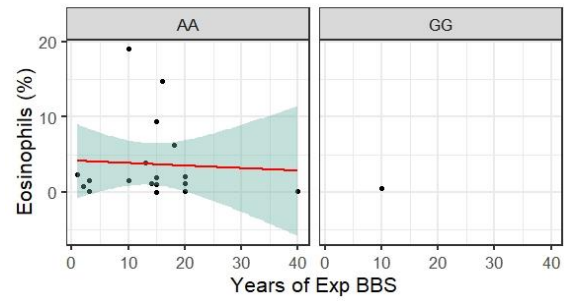
	GF (%)	GF (%)			
		<i>IL13 rs20541</i>			
GG	24 (38.7)	17 (47.2)		1.0 (Ref)	
GA	32 (51.6)	16 (44.4)	0.71	1.41	0.59-3.36
AA	6 (9.7)	3 (8.3)		1.41	0.31-6.49
		<i>IL13 rs1800925</i>			
CC	32 (51.6)	18 (50.0)		1.0 (Ref)	
CT	22 (35.5)	12 (33.3)	0.82	1.03	0.41-2.56
TT	6 (9.7)	5(17.7)		0.67	0.18-2.52
		<i>IL4 rs2070874</i>			
TT	16 (25.8)	9 (25.0)		1.0 (Ref)	
TC	28 (45.2)	17 (47.2)	0.98	0.92	0.33-2.55
CC	18 (29.0)	10 (27.8)		1.01	0.32-3.11
Gene/SNP	Low (n=25) GF (%)	Normal (n=36) GF (%)	p	OR	CI (95%)
		<i>IL13 rs20541</i>			
GG	11 (44.0)	17 (47.2)		1.0 (Ref)	
GA	13 (52.0)	16 (44.4)	0.89	1.25	0.43-2.60
AA	1 (4.0)	3 (8.3)		1.54	0.08-27.36
		<i>IL13 rs1800925</i>			
CC	9 (36.0)	18 (50.0)		1.0 (Ref)	
CT	13 (52.0)	12 (33.3)	0.38	2.16	0.71-6.65
TT	3 (12.0)	5(17.7)		1.2	0.23-6.19
		<i>IL4 rs2070874</i>			
TT	8 (32.0)	9 (25.0)		1.0 (Ref)	
TC	13 (52.0)	17 (47.2)	0.55	0.86	0.26-2.84
CC	4 (16.0)	10 (27.8)		0.45	0.10-2.01
Basophils					
Gene/SNP	High (n=113) GF (%)	Normal (n=9) GF (%)	p	OR	CI (95%)
		<i>IL13 rs20541</i>			
GG	49 (43.4)	2 (22.2)		1.0 (Ref)	
GA	55 (48.7)	6 (66.7)	0.46	0.37	0.01-1.94
AA	9 (7.9)	1 (11.1)		0.36	0.03-4.49
		<i>IL13 rs1800925</i>			
CC	56 (49.6)	3 (33.3)		1.0 (Ref)	
CT	41 (36.3)	5 (55.6)	0.54	0.43	0.09-1.94
TT	13 (11.5)	1 (11.1)		0.69	0.06-7.25
		<i>IL4 rs2070874</i>			
TT	29 (25.7)	4 (44.4)		1.0 (Ref)	
TC	54 (47.8)	4 (44.4)	0.39	1.86	0.43-7.99
CC	30 (26.5)	1 (11.1)		4.13	0.44-39.26

Genotype frequencies were compared by Fisher's exact test. For statistical significance was considered a $p < 0.05$. Ref: Genotype employed as a reference for statistical analysis. CI: Confidence intervals. OR: Odds ratio.

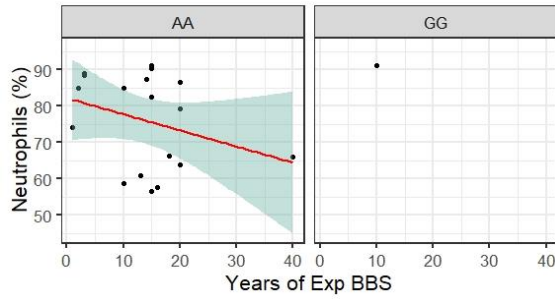
Correlation stratified for rs20541



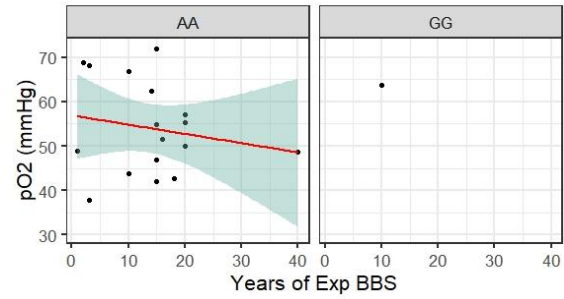
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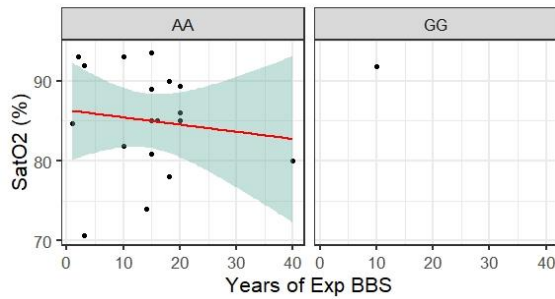
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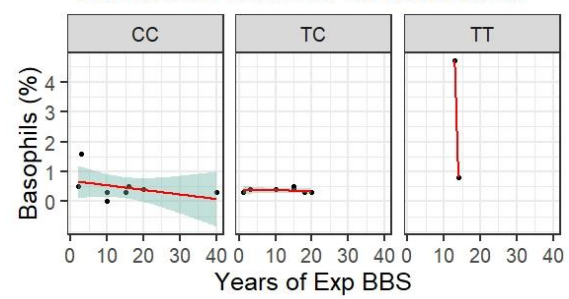
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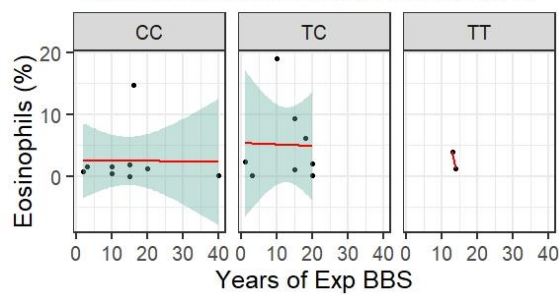
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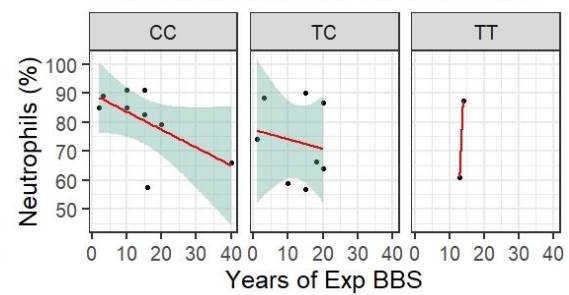
Correlation stratified for rs1800925



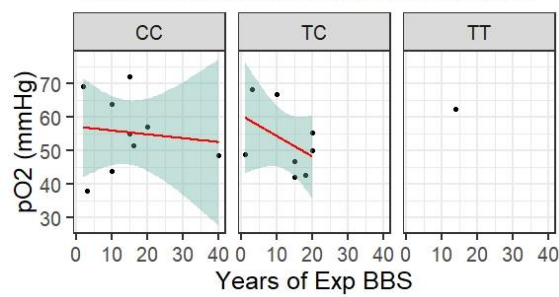
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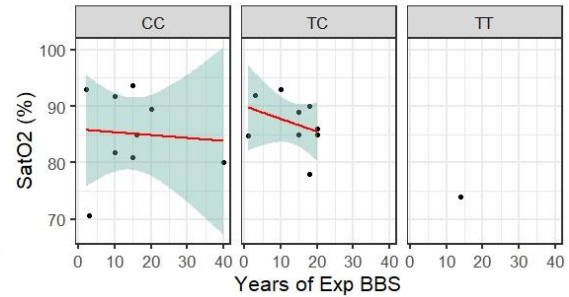
Correlation stratified for rs1800925



Correlation stratified for rs1800925



Correlation stratified for rs1800925



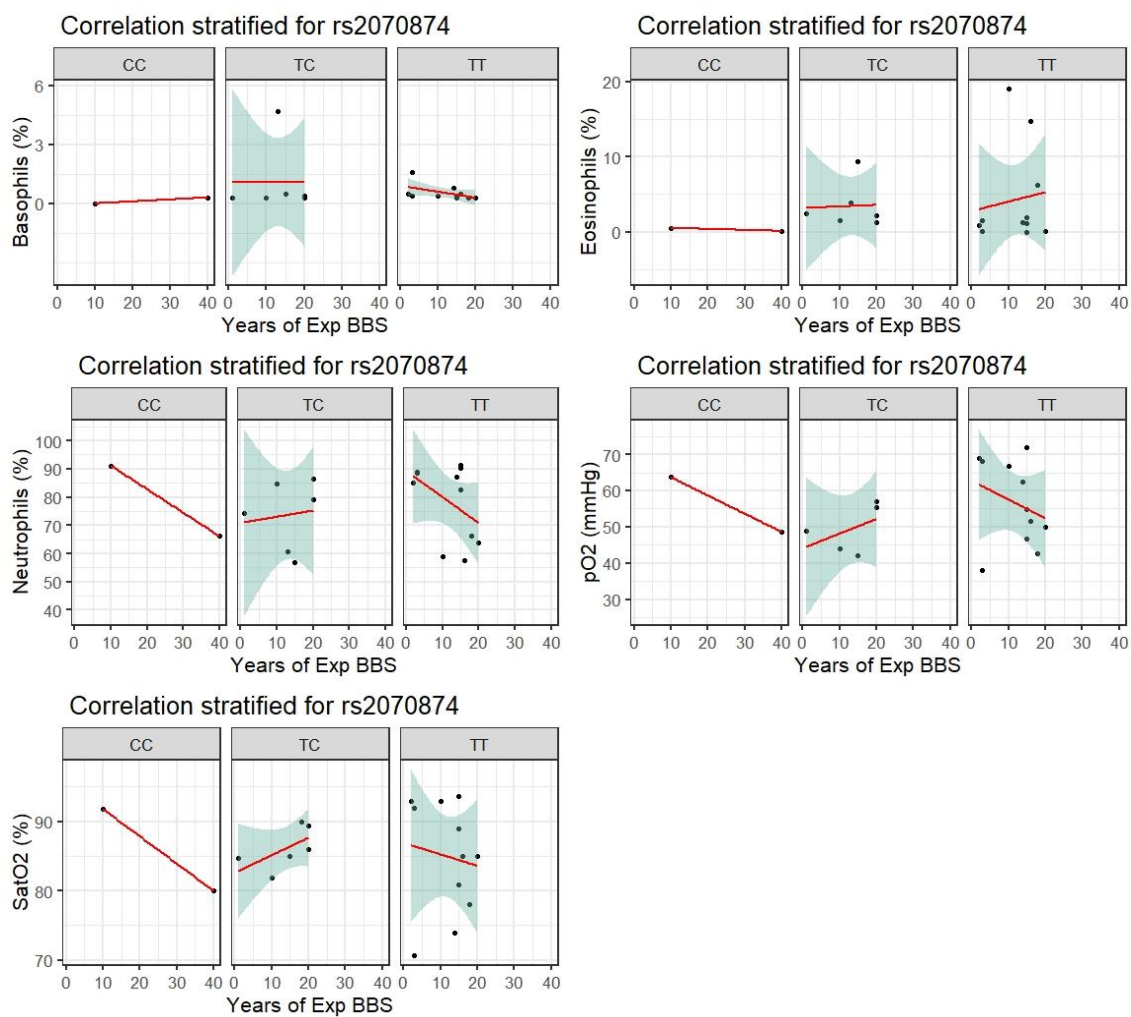


Figure S1. Correlation between cellularity and SNPs in the context of years of exposition to BBS. Blue areas show standard error (95%).

Table S4. Correlation between SNPs and cellularity/arterial blood gas values in the context of BBS.

Gene/SNP	Variable	ρ	p	CI 95%
<i>IL13</i> rs1800925	Neutrophils			
	TT	NA	NA	NA
	TC	-0.12	0.800	(-0.73 - 0.59)
	CC	-0.66	0.055	(-0.92 - 0.02)
	Eosinophils			
	TT	NA	NA	NA
	TC	-0.19	0.656	(-0.76 - 0.54)
	CC	-0.07	0.855	(-0.70 - 0.62)
	Basophils			
	TT	NA	NA	NA
	TC	-0.37	0.368	(-0.85 - 0.45)
	CC	-0.23	0.545	(-0.78 - 0.51)
	pO₂			
	TT	NA	NA	NA
	TC	-0.20	0.627	(-0.76 - 0.53)
	CC	-0.06	0.881	(-0.66 - 0.59)
	SatO₂			
	TT	NA	NA	NA
	TC	-0.22	0.569	(-0.75 - 0.48)
	CC	-0.16	0.682	(-0.72 - 0.52)
<i>IL13</i> rs20541	Neutrophils			
	GG	NA	NA	NA
	GA	NA	NA	NA
	AA	-0.25	0.318	(-0.63 - 0.23)
	Eosinophils			
	GG	NA	NA	NA
	GA	NA	NA	NA
	AA	-0.10	0.702	(-0.53 - 0.37)
	Basophils			
	GG	NA	NA	NA
	GA	NA	NA	NA
	AA	-0.37	0.128	(-0.72 - 0.13)
	pO₂			
	GG	NA	NA	NA
	GA	NA	NA	NA
	AA	-0.14	0.602	(-0.57 - 0.35)
	SatO₂			
	GG	NA	NA	NA
	GA	NA	NA	NA
	AA	-0.07	0.772	(-0.51 - 0.39)
Neutrophils				

<i>IL4</i> <i>rs2070874</i>	TT	-0.37	0.259	(-0.77 - 0.22)
	TC	0.26	0.618	(-0.61 - 0.85)
	CC	NA	NA	NA
Eosinophils				
	TT	0.10	0.762	(-0.50 - 0.64)
	TC	-0.26	0.618	(-0.85 - 0.61)
	CC	NA	NA	NA
Basophils				
	TT	-0.62	0.042	(-0.90 - 0.02)
	TC	0.22	0.682	(-0.64 - 0.83)
	CC	NA	NA	NA
pO₂				
	TT	-0.41	0.206	(-0.80 - 0.21)
	TC	0.56	0.322	(-0.46 - 0.94)
	CC	NA	NA	NA
SatO₂				
	TT	-0.20	0.549	(-0.70 - 0.42)
	TC	0.75	0.084	(0.00 - 0.96)
	CC	NA	NA	NA

Data obtained from Spearman's Rho correlation. pO₂: Partial pressure Oxygen, SatO₂: Oxygen saturation, NA: Not applicable. CI: Confidence intervals. ρ= Ro value.