

**Supplementary table S2. Expression levels of the top 10 genes that contribute most negatively (Healthy controls class) to the model according to the logistic regression model**

class	Negative										
	gene	8137264	7983890	8110971	7904967	8106025	7985431	8031570	8007848	8029693	7914180
Healthy control	GSM665386	6.23	7.20	6.39	9.55	4.30	5.84	3.02	5.23	8.45	4.96
Healthy control	GSM665387	7.64	6.63	7.03	9.43	3.72	6.95	3.63	6.06	9.03	3.87
Healthy control	GSM665388	9.29	6.54	5.61	9.02	3.48	4.89	3.34	6.18	7.86	4.45
Healthy control	GSM665389	7.24	8.23	5.66	9.32	2.16	6.82	3.44	5.98	7.94	4.89
Healthy control	GSM665390	7.60	6.61	6.10	6.58	2.55	7.01	4.49	4.76	7.83	4.19
Healthy control	GSM665391	8.77	7.10	5.95	8.24	2.17	7.30	4.99	5.80	6.92	3.57
Healthy control	GSM665392	8.32	7.45	5.23	9.47	2.55	6.31	3.43	6.09	9.84	4.71
Healthy control	GSM665393	6.21	7.18	6.04	8.83	2.32	7.49	4.86	4.31	7.33	4.80
Healthy control	GSM665394	8.42	7.06	7.73	8.45	1.76	6.97	3.31	5.49	7.98	5.01
Healthy control	GSM665395	8.48	7.37	5.94	8.64	4.26	6.77	5.60	5.17	7.45	5.03
Healthy control	GSM665396	8.18	7.23	6.77	8.75	5.44	6.29	3.66	6.25	8.88	3.00
Healthy control	GSM665397	7.37	6.74	6.31	9.30	2.73	6.61	4.85	6.29	9.73	5.03
Healthy control	GSM665398	6.38	6.81	5.69	7.08	3.42	7.07	6.93	4.93	6.80	5.61
Healthy control	GSM665399	5.91	7.22	5.64	8.66	3.24	6.64	3.76	5.28	6.51	3.95
Healthy control	GSM665400	7.78	7.04	6.53	9.49	2.51	6.99	3.06	6.17	8.22	6.21
Healthy control	GSM665401	8.44	6.93	6.30	9.69	2.35	6.58	3.46	6.10	7.89	4.76
Healthy control	GSM665402	8.46	7.56	6.32	8.38	2.75	6.75	3.31	5.08	7.86	3.35
Healthy control	GSM665403	6.15	6.37	6.59	8.96	2.22	6.00	3.97	5.18	8.77	4.85
Severe asthma	GSM665423	6.20	5.84	5.01	9.03	2.44	6.46	3.56	4.35	7.34	3.94
Severe asthma	GSM665424	5.74	7.15	5.30	9.30	2.37	5.75	2.92	3.98	7.28	3.23
Severe asthma	GSM665425	8.01	5.92	5.45	9.02	1.99	6.53	3.33	5.32	8.05	4.92
Severe asthma	GSM665426	7.60	6.17	5.47	9.20	2.38	5.80	3.63	5.09	7.42	5.13
Severe asthma	GSM665427	8.00	6.28	5.95	9.27	2.10	6.39	4.38	5.11	7.11	3.45
Severe asthma	GSM665428	6.64	6.51	5.36	8.90	2.55	4.85	3.23	7.34	6.93	5.85
Severe asthma	GSM665429	8.09	6.15	5.33	9.42	2.68	6.08	3.27	5.20	7.12	5.00
Severe asthma	GSM665430	7.86	6.43	5.63	8.81	2.88	6.96	3.63	5.46	7.68	3.46
Severe asthma	GSM665431	5.74	5.99	5.02	6.42	2.62	6.74	3.17	4.70	6.74	4.25
Severe asthma	GSM665432	8.25	5.91	5.46	8.30	2.91	6.24	3.35	4.08	6.69	2.57
Severe asthma	GSM665433	6.57	7.40	5.37	9.21	2.40	5.48	3.43	3.60	7.31	3.35
Severe asthma	GSM665434	7.77	6.14	6.02	6.84	2.43	6.53	3.99	3.87	6.91	2.96
Severe asthma	GSM665435	7.88	6.61	5.96	6.55	2.56	5.58	3.35	4.62	6.88	5.27
Severe asthma	GSM665436	8.69	7.85	5.94	9.36	3.15	5.32	3.26	5.77	7.07	3.53

Severe asthma	GSM66543 7	7.88	6.47	5.64	9.53	2.50	6.32	3.51	6.02	7.03	4.93
Severe asthma	GSM66543 8	6.02	6.35	5.77	9.56	2.46	6.31	3.17	5.80	8.26	4.64
Severe asthma	GSM66543 9	6.76	6.40	5.81	8.52	2.30	6.55	3.30	4.93	6.62	3.43