

Additional File 2. Differential Expression of Oxidant-related Genes in Alveolar Macrophages and Small Airway Epithelium from the Same Healthy Nonsmokers¹

Category	Probe set ID	Gene symbol	Gene	Alveolar macrophages % present	Airway epithelium% present	Fold-change AM/ SAE	p value
Glutathione metabolism	202804_at	ABCC1	ATP-binding cassette, sub-family C, member 1	100	100	4.94	<0.001
	202275_at	G6PD	glucose-6-phosphate dehydrogenase	77	100	26.21	<0.001
	202922_at	GCLC	glutamate-cysteine ligase, catalytic subunit	100	100	-2.10	<0.001
	207131_x_at	GGT1	gamma-glutamyltransferase 1	95	100	3.96	<0.001
	200736_s_at	GPX1	glutathione peroxidase 1	100	100	5.01	<0.001
	202831_at	GPX2	glutathione peroxidase 2	100	0	-9.88	<0.001
	201348_at	GPX3	glutathione peroxidase 3	100	100	4.67	<0.001
	201106_at	GPX4	glutathione peroxidase 4	100	100	2.92	<0.001
	205770_at	GSR	glutathione reductase	100	100	5.43	<0.001
	211630_s_at	GSS	glutathione synthetase	100	100	3.06	<0.001
	222102_at	GSTA3	glutathione S-transferase A3	100	0	-76.07	<0.001
	202967_at	GSTA4	glutathione S-transferase A4	100	100	-3.21	<0.001
	217751_at	GSTK1	glutathione S-transferase kappa 1	100	100	2.06	<0.001
	202554_s_at	GSTM3	glutathione S-transferase M3 (brain)	95	100	6.08	<0.001
	210912_x_at	GSTM4	glutathione S-transferase M4	100	100	2.20	<0.001
	201470_at	GSTO1	glutathione S-transferase omega 1	100	100	12.73	<0.001
	227163_at	GSTO2	glutathione S-transferase omega 2	100	5	-11.40	<0.001
	200824_at	GSTP1	glutathione S-transferase pi	100	100	-1.59	0.001
	201193_at	IDH1	isocitrate dehydrogenase 1 (NADP+), alpha	100	100	2.63	<0.001
	202069_s_at	IDH3A	isocitrate dehydrogenase 3 (NAD+) alpha	100	100	1.89	<0.001
	201509_at	IDH3B	isocitrate dehydrogenase 3 (NAD+) beta	100	100	2.39	<0.001
	202471_s_at	IDH3G	isocitrate dehydrogenase 3 (NAD+) gamma	100	100	2.84	<0.001
	1565162_s_at	MGST1	microsomal glutathione S-transferase 1	100	100	4.40	<0.001
	201403_s_at	MGST3	microsomal glutathione S-transferase 3	100	100	4.99	<0.001
	242617_at	TMED8	Transmembrane emp24 protein transport domain containing 8	100	100	2.45	<0.001
Redox balance	210505_at	ADH7	alcohol dehydrogenase 7, mu or sigma polypeptide	100	5	-12.02	<0.001
	201272_at	AKR1B1	aldo-keto reductase family 1, member B1	100	100	39.42	<0.001
	209160_at	AKR1C3	aldo-keto reductase family 1, member C3	100	100	4.41	<0.001

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Category	Probe set ID	Gene symbol	Gene	Alveolar macrophages % present	Airway epithelium% present	Fold-change AM/ SAE	p value
Catalase/ SOD	211922_s_at	CAT	catalase	100	100	2.22	<0.001
	16841_s_at	SOD2	superoxide dismutase 2	100	100	48.67	<0.001
Other oxidants scavengers	227253_at	CP	ceruloplasmin (ferroxidase)	100	63	-22.66	<0.001
	219933_at	GLRX2	glutaredoxin 2	100	100	12.99	<0.001
	202018_s_at	LTF	lactotransferrin	100	0	-271.28	<0.001
	216336_x_at	MT1A	metallothionein 1A	100	100	11.38	<0.001
	212859_x_at	MT1E	metallothionein 1E	100	100	6.64	<0.001
	213629_x_at	MT1F	metallothionein 1F	100	100	21.70	<0.001
	217546_at	MT1M	metallothionein 1M	21	100	202.48	<0.001
	204326_x_at	MT1X	metallothionein 1X	100	100	10.15	<0.001
	212185_x_at	MT2A	metallothionein 2A	100	100	12.09	<0.001
	208680_at	PRDX1	peroxiredoxin 1	100	100	3.35	<0.001
	39729_at	PRDX2	peroxiredoxin 2	100	100	-4.10	<0.001
	201619_at	PRDX3	peroxiredoxin 3	100	100	1.85	<0.001
	201923_at	PRDX4	peroxiredoxin 4	100	100	1.84	<0.001
	1560587_s_at	PRDX5	peroxiredoxin 5	100	100	-3.23	<0.001
	200844_s_at	PRDX6	peroxiredoxin 6	100	100	1.50	0.001
	208691_at	TFRC	transferrin receptor	100	100	14.48	<0.001
	208864_s_at	TXN	thioredoxin	100	100	4.59	<0.001
	209077_at	TXN2	thioredoxin 2	100	100	1.62	0.004
	201266_at	TXNRD1	thioredoxin reductase 1	100	100	5.66	<0.001
	211177_s_at	TXNRD2	thioredoxin reductase 2	37	79	3.51	0.002
	59631_at	TXNRD3	thioredoxin reductase 3	100	79	-1.72	<0.001
	1558549_s_at	VNN1	vanin 1	53	74	3.56	0.002
Pentose phosphate cycle	208308_s_at	GPI	glucose phosphate isomerase	100	100	6.19	<0.001
	210976_s_at	PFKM	phosphofructokinase, muscle	100	100	-2.88	<0.001
	201037_at	PFKP	phosphofructokinase, platelet	100	100	2.66	<0.001
	201118_at	PGD	phosphogluconate dehydrogenase	100	100	17.10	<0.001
	218388_at	PGLS	6-phosphogluconolactonase	100	100	3.07	<0.001
	201968_s_at	PGM1	phosphoglucomutase 1	100	100	2.37	<0.001
	213093_at	PRKCA	protein kinase C, alpha	100	95	-2.11	<0.001
	230352_at	PRPS2	Phosphoribosyl pyrophosphate synthetase 2	100	100	3.06	0.037

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Category	Probe set ID	Gene symbol	Gene	Alveolar macrophages % present	Airway epithelium% present	Fold-change AM/ SAE	p value
Xenobiotic metabolism	225039_at	RPE	ribulose-5-phosphate-3-epimerase	100	100	4.34	<0.001
	212973_at	RPIA	ribose 5-phosphate isomerase A	100	100	3.71	<0.001
	201463_s_at	TALDO1	transaldolase 1	100	100	6.15	<0.001
	208700_s_at	TKT	transketolase	100	100	7.27	<0.001
	202437_s_at	CYP1B1	cytochrome P450, family 1, subfamily B, polypeptide 1	32	100	369.32	<0.001
	1494_f_at	CYP2A6	cytochrome P450, family 2, subfamily A, polypeptide 6	100	32	-2.73	<0.001
	207718_x_at	CYP2A13	cytochrome P450, family 2, subfamily A, polypeptide13	89	0	-3.21	<0.001
	217133_x_at	CYP2B6	cytochrome P450, family 2, subfamily B, polypeptide 6	95	47	-2.18	<0.001
	210272_at	CYP2B7P1	cytochrome P450, family 2, subfamily B, polypeptide 7 pseudogene 1	100	0	-21.66	<0.001
	208126_s_at	CYP2C18	cytochrome P450, family 2, subfamily C, polypeptide 18	68	0	-11.17	<0.001
	208147_s_at	CYP2C8	cytochrome P450, family 2, subfamily C, polypeptide 8	100	0	-9.75	<0.001
	216025_x_at	CYP2C9	cytochrome P450, family 2, subfamily C, polypeptide 9	100	21	-1.82	<0.001
	209975_at	CYP2E1	cytochrome P450, family 2, subfamily E, polypeptide 1	79	0	-2.47	<0.001
	205073_at	CYP2J2	cytochrome P450, family 2, subfamily J, polypeptide 2	100	0	-38.51	<0.001
	227109_at	CYP2R1	cytochrome P450, family 2, subfamily R, polypeptide 1	100	100	2.91	<0.001
	223385_at	CYP2S1	cytochrome P450, family 2, subfamily S, polypeptide 1	100	74	-2.11	<0.001
	205999_x_at	CYP3A4	cytochrome P450, family 3, subfamily A, polypeptide 4	11	53	5.47	<0.001
	205939_at	CYP3A7	cytochrome P450, family 3, subfamily A, polypeptide 7	5	58	10.61	0.001
	1555497_a_at	CYP4B1	cytochrome P450, family 4, subfamily B, polypeptide 1	100	0	-92.38	<0.001
	206539_s_at	CYP4F12	cytochrome P450, family 4, subfamily F, polypeptide 12	63	0	-7.00	<0.001
	206515_at	CYP4F3	cytochrome P450, family 4, subfamily F, polypeptide 3	95	5	-3.18	<0.001

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Category	Probe set ID	Gene symbol	Gene	Alveolar macrophages % present	Airway epithelium% present	Fold-change AM/ SAE	p value
	226745_at	CYP4V2	cytochrome P450, family 4, subfamily V, polypeptide 2	100	100	1.55	0.001
	227702_at	CYP4X1	cytochrome P450, family 4, subfamily X, polypeptide 1	100	0	-279.05	<0.001
	237395_at	CYP4Z1	cytochrome P450, family 4, subfamily Z, polypeptide 1	95	0	-8.46	<0.001
	219565_at	CYP20A1	cytochrome P450, family 20, subfamily A, polypeptide 1	95	100	3.59	<0.001
	206504_at	CYP24A1	cytochrome P450, family 24, subfamily A, polypeptide 1	79	0	-3.82	0.002
	203979_at	CYP27A1	cytochrome P450, family 27, subfamily A, polypeptide 1	68	100	39.58	<0.001
	205676_at	CYP27B1	cytochrome P450, family 27, subfamily B, polypeptide 1	0	63	28.19	<0.001
	1553977_a_at	CYP39A1	cytochrome P450, family 39, subfamily A, polypeptide 1	100	5	-4.66	<0.001
	202314_at	CYP51A1	cytochrome P450, family 51, subfamily A, polypeptide 1	100	100	-1.93	<0.001
	209368_at	EPHX2	epoxide hydrolase 2, cytoplasmic	95	0	-32.83	<0.001
	228678_at	FAM116B	family with sequence similarity 116, member B	95	0	-11.77	<0.001
Selenium-related	1555274_a_at	SELI	selenoprotein I	100	100	3.62	<0.001
	223070_at	SELK	selenoprotein K	100	100	3.66	<0.001
	223209_s_at	SELS	selenoprotein S	100	100	2.79	<0.001
	225561_at	SELT	selenoprotein T	100	100	2.96	<0.001
	237475_x_at	SEPP1	Selenoprotein P, plasma, 1	100	100	-2.14	<0.001
	201194_at	SEPW1	selenoprotein W, 1	100	100	-2.64	<0.001
Bilirubin-related	203771_s_at	BLVRA	biliverdin reductase A	100	100	7.52	<0.001
	203665_at	HMOX1	heme oxygenase (decycling) 1	89	100	45.95	<0.001
	218120_s_at	HMOX2	heme oxygenase (decycling) 2	100	100	4.76	<0.001
	209236_at	SLC23A2	solute carrier family 23, member 2	95	89	2.30	<0.001
Ascorbic acid-related	223732_at	SLC23A1	solute carrier family 23 , member 1	100	0	-22.93	<0.001

¹ Expression (as detection call of present) in alveolar macrophages (AM) and small airway epithelium (SAE) of healthy nonsmokers (n=19).