

Supplementary Data

Neuroinflammation, Hyperphosphorylated Tau, Diffuse Amyloid Plaques, and Down-Regulation of the Cellular Prion Protein in Air Pollution Exposed Children and Young Adults

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Supplementary Table 1

mRNA IL-1 β expression in frontal samples in controls (CTLs) ($n=8$) versus Mexico City (MC) children and young adult cohorts ($n=35$)

Values of selected gene*	IL-1 β CTL	IL-1 β MC
Mean	1725	11214.4†
SD	487.5	7318.76
SEM	243	2314.39

*The amount of IL-1 β cDNA in each sample was normalized to the amount of GAPDH cDNA yielding an index: molecules per femtomol of GAPDH proportional to the relative abundance of each mRNA sample. † $p=0.0008$

Supplementary Table 2

NF κ B signaling. Gene expression changes identified in the microarray analysis are listed in order from highest to lowest

Symbol	Gene name	Fold change
FOS	G0/G1 switch regulatory protein 7	5.78
IL1R1	Interleukin 1 receptor, type 1	3.41
SLC44A2	Choline transporter-like protein 2	3.16
CASP1	Caspase 1	3.14
IL1B	Interleukin 1 beta	3.12
CCL2	Chemokine (C-C motif) ligand 2	2.50
CHUK	Conserved helix-loop-helix ubiquitous kinase	-4.76
EDG2	Lysophosphatidic acid receptor Edg-2	-3.58
TBK1	TANK-binding kinase 1	-3.27
F2R	Coagulation factor II (thrombin) receptor	-2.45
ELK1	ELK1, member of ETS oncogene family	-2.19
IRAK1	Interleukin-1 receptor-associated kinase 1	-2.16

Supplementary Table 3

DNA damage signaling. Gene expression changes identified in the microarray analysis are listed in order from highest to lowest

Symbol	Gene name	Fold change
BTG2	BTG family member 2	6.83
CHEK2	CHK2 check point homolog	3.19
CIDEA	Cell death-inducing DFFA-like effector A	2.70
GADD45A	Growth arrest and DNA-damage-inducible, alpha	2.48
BRCA1	Breast cancer 1, early onset	2.35
SEMA4A	Sema domain, immunoglobulin domain (Ig)	-3.20
SESN1	Sestrin 1	-2.46
HUS1	Checkpoint homolog	-2.42
RAD21	RAD21 homolog	-2.18
MSH2	MutS homolog 2, colon cancer, nonpolyposis type 1	-2.17
AIFM1	Apoptosis-inducing factor, mitochondrion-associated, 1	-2.13
MLH1	MutL homolog 1, colon cancer, nonpolyposis type 2	-2.02

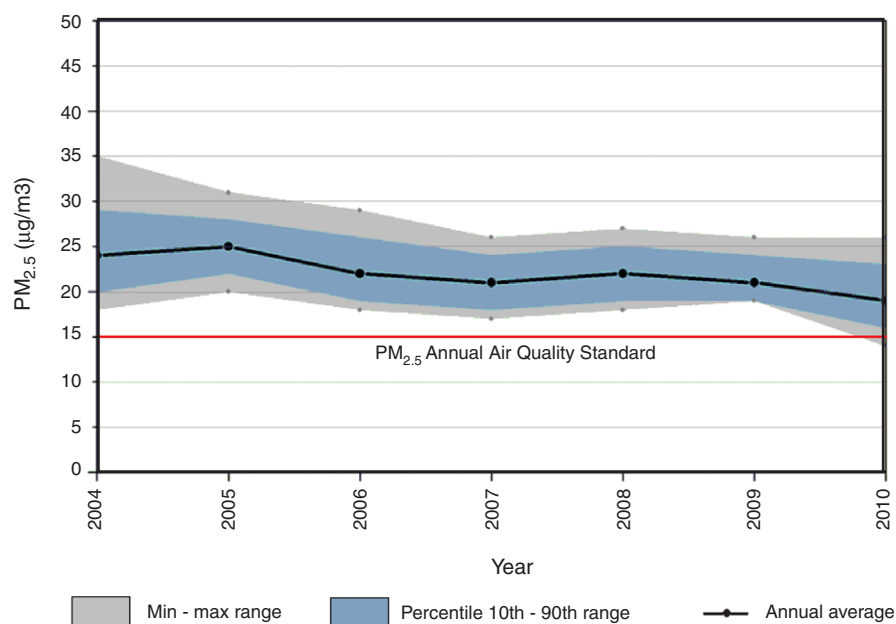
Supplementary Table 4

Inflammasomes signaling pathway genes up regulated in frontal MC versus control samples.

Symbol	Gene name	Fold change
NEMO	NF κ B essential modulator	18.38
CCL-2	Chemokine (C-C motif) ligand 2	13.74
PYDC1	PYD (pyrin domain) containing 1	13.18
IL12A	Interleukin 12A	11.96
PYCARD	Pyrin-domain containing protein 1	9.58

Supplementary Table 4
(Continued)

Symbol	Gene name	Fold change
MAPK12	Mitogen-activated protein kinase 12	9.38
RIPK2	Receptor-interacting serine-threonine kinase 2	7.41
CASP4	Caspase 4	6.96
IKBKB	Inhibitor of kappa light polypeptide gene enhancer in B-cells	6.77
MAPK13	Mitogen-activated protein kinase 13	6.28
BCL2	B-cell CLL/lymphoma 2	5.62
MAPK11	Mitogen-activated protein kinase 11	5.46
P2RX7	Purinergic receptor P2X, ligand-gated ion channel, 7	5.17
TXNIP	Thioredoxin interacting protein	5.10
RELA	v-rel reticuloendotheliosis viral oncogene homolog A	4.59
BCL2L1	bcl-2-like protein	4.56
NAIP	NLR family, apoptosis inhibitory protein	3.94
CFLAR	CASP8 and FADD-like apoptosis regulator	3.94
TRAF6	TNF receptor-associated factor 6	3.92
MAP3K7IP1	Mitogen-activated protein kinase kinase 7 inhibitory protein1	3.84
PTGS2	cyclooxygenase-2	3.66
XIAP	X-linked inhibitor of apoptosis	3.34
IRF2	Interferon regulatory factor 2	3.05
NLRC4	NLR family, CARD domain containing 4	2.93
MAPK1	Mitogen-activated protein kinase 1	2.77
RAGE	Renal cell carcinoma antigen (MOK protein kinase)	2.57
MAPK3	Mitogen-activated protein kinase 3	2.30



Supplementary Figure. 1.