

Supplementary information 1

Fine particulate matter 2.5 exerted its toxicological effect by  
regulating a new layer, long non-coding RNA

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**Table of contents**

Supplementary Material Table S1: Primer sequences used in the realtime RT-PCR.....3

Supplementary Material Table S2: Significantly enriched pathways from differentially expressed mRNA.....4

Supplementary Material Figure S1: Effects of organic extracts from Nanjing and Shanghai PM2.5 on the cell viability by MTT assay.....5

Supplementary Material Figure S2: GO analysis of significantly differentially expressed mRNA between control vs Nanjing; control vs Shanghai.....6

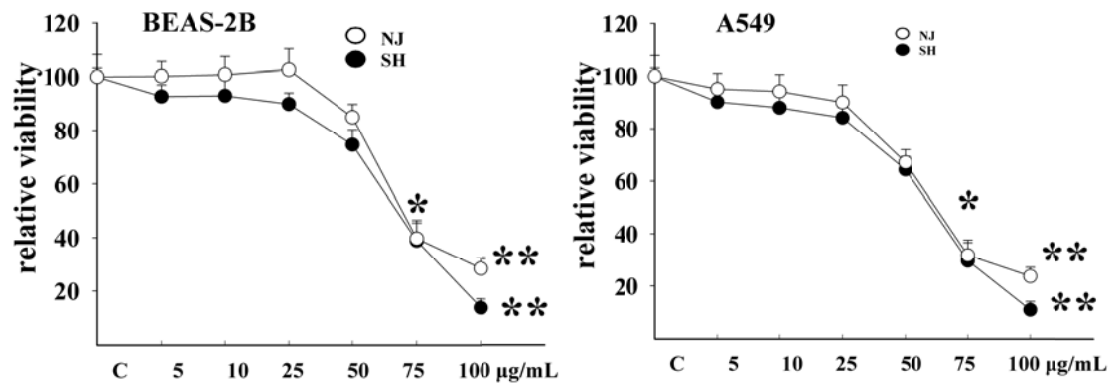
**Table S1** primer sequences used in the realtime RT-PCR

Genes	Nucleotide accession number	Primer sequences used for RT-PCR (5' to 3')
n345347	/	F: GATGTTACAGCCTCTGCCTCTGG R: GGATCCCAAGGAGGGAGAAAAGGA
n405968	<i>NR_001458</i>	F: GCTCCTGGCACTGCAGATAACTT R: GTGCCACCATTAGAGCCATCTCC
n407133	<i>NR_026545</i>	F: GCCTGAGCTTGCTCACCTTCAAA R: CCTTGCCTCCTCCACATACTTCG
MALAT1 (metastasis associated lung adenocarcinoma transcript 1)	<i>NR_002819</i>	F: TAGGAAGACAGCAGCAGACAGG R: TTGCTCGCTTGCTCCTCAGT
AFAP1 (actin filament associated protein 1)	<i>NM_001134647</i>	F: CCGTGCATCAACGGCTCGCTC R: TTCACAACAGCCGCGGGATCC
AFAP1-AS1 (AFAP1 antisense RNA 1)	<i>NR_026892</i>	F: TCGCTCAATGGAGTGACGGCA R: CGGCTGAGACCGCTGAGAACTT
IL-1 $\beta$ (interleukin 1 beta)	<i>NM_000576</i>	F: GGACAAGCTGAGGAAGATGC R: TCGTTATCCCATGTGTCGAA
IL-6 (interleukin 6)	<i>NM_000600</i>	F: AAATTCGGTACATCCTCGACGG R: GGAAGGTCAGGTTGTTTTCTGC
IL-8 (interleukin 8)	<i>NM_000584</i>	F: GCATAAAGACATACTCCAAACC R: ACTTCTCCACAACCCTCTG
E-cadherin	<i>NM_004360</i>	F: GGATGTGCTGGATGTGAATG R: CTGGGCAGTGTAGGATGTGA
N-cadherin	<i>NM_001308176</i>	F: CGTGAAGGTTTGCCAGTGT R: GCACAAGGATAAGCAGGATG
HOXB-6 (homeobox B6)	<i>NM_018952.4</i>	F: TATGGTTCCAGAACCGACGCAT R: TCGGCCTGTTTTTCTCCTCCT
GAPDH (Glyceraldehyde-3- phosphate dehydrogenase)	<i>NM_002046</i>	F: GGAGAAGGCTGGGGCTCAT R: TGATGGCATGGACTGTGGTC

**Table S2** significantly enriched pathways from differentially expressed mRNA  
(control vs Nanjing or control vs Shanghai)  $p < 0.05$

C vs NJ		C vs SH		
	Name of pathway	Pathway ID	Name of pathway	Pathway ID
1	Amoebiasis	ko05146	Amoebiasis	ko05146
2	Rheumatoid arthritis	ko05323	Chemokine signaling pathway	ko04062
3	Rap1 signaling pathway	ko04015	Type II diabetes mellitus	ko04930
4	Chagas disease (American trypanosomiasis)	ko05142	Non-alcoholic fatty liver disease (NAFLD)	ko04932
5	Toll-like receptor signaling pathway	ko04620	Legionellosis	ko05134
6	Non-alcoholic fatty liver disease (NAFLD)	ko04932	Rheumatoid arthritis	ko05323
7	Melanoma	ko05218	Ovarian steroidogenesis	ko04913
8	Legionellosis	ko05134	Jak-STAT signaling pathway	ko04630
9	TNF signaling pathway	ko04668	Apoptosis	ko04210
10	PI3K-Akt signaling pathway	ko04151	Pertussis	ko05133

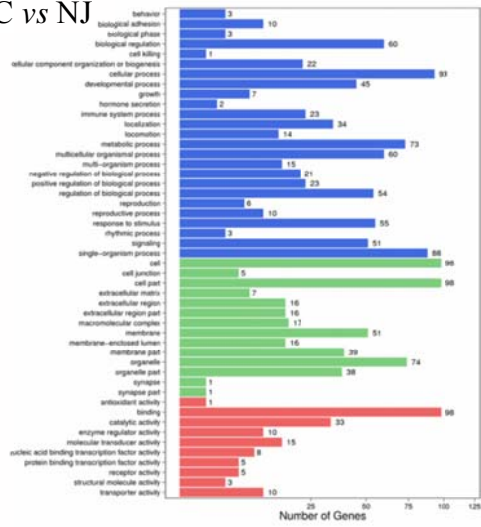
**Figure S1**



**Figure S1** Effects of organic extracts from Nanjing and Shanghai PM2.5 on the viability of BEAS-2B and A549 cells by MTT assay. (\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$  vs control)

Figure S2

C vs NJ



C vs SH

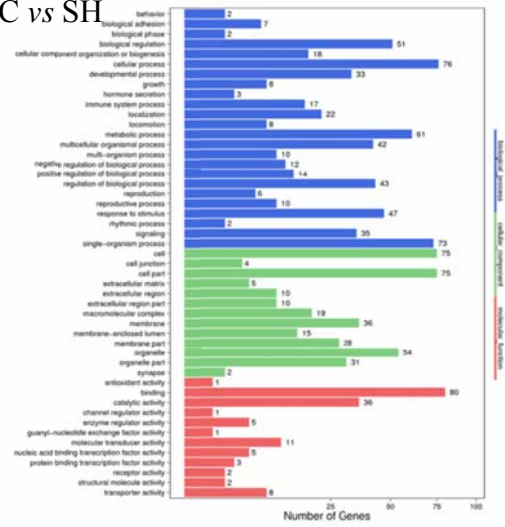


Figure S2 GO analysis of significantly differentially expressed mRNA between control vs Nanjing; control vs Shanghai.