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Expectorant Effects of *Atractylodes japonica* Koidz. ex Kitam Root Extracts on Particulate Matter-Induced Pulmonary Injury in Mice

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Table S1. Specific conditions for HPLC analysis.

Item	**HPLC Analysis Condition**		
Column	Unison US-C18 column (Peakman^{SP} Co. Ltd., Hanam, Republic of Korea) Dimentions: 4.6 × 250 mm, 5 μm		
Injection	10 μL	Column temp.	25℃
Flow	1.0 mL/min	Wavelength	224 nm
Time (min)	Mobile Phase		
	A (Acetonytrile, %)	B (0.05% Trifluroacetic acid, %)	
0	53	47	
30	53	47	
31	0	100	
45	0	100	

Table S2. Oligonucleotides used for quantitative RT-PCR.

Gene	5′ – 3′	Sequence	Gene ID
MUC5AC	Forward Reverse	CACCATCTCTACAACCCAAACT TGAGGTCCAGGTCTTTGTGTCT	17833
MUC5B	Forward Reverse	GCCCTCACTGCCTCTGCTCCAC TTTTACAGTGCCAGG GTTTATT	74180
β-actin	Forward Reverse	CTGTCGAGTCGCGTCCACCCGCGAG CTCGCGGGTGGACGCGACTCGACAG	11461

RT-PCR: Reverse transcription polymerase chain reaction; MUC: Mucin.

Table S3. Primary antisera and detection kits used for immunohistochemistry.

Antisera or detection kits	Code	Source	Dilution
Primary antisera*			
Anti-cleaved caspase-3 antibody	9661	Cell Signaling Technology Inc., Beverly, MA, USA	1:400
Anti-COX-2 (murine) polyclonal antibody	160126	Cayman Chemical., Ann Arbor, MI, USA	1:200
Detection kits			
Vectastain Elite ABC Kit	PK-6200	Vector Lab., Burlingame, CA, USA	1:50
Peroxidase substrate kit	SK-4100	Vector Lab., Burlingame, CA, USA	1:50

All antisera were diluted using 0.01 M phosphate buffered saline (pH 7.2). COX: Cyclooxygenase; ABC: Avidin-biotin-peroxidase complex.

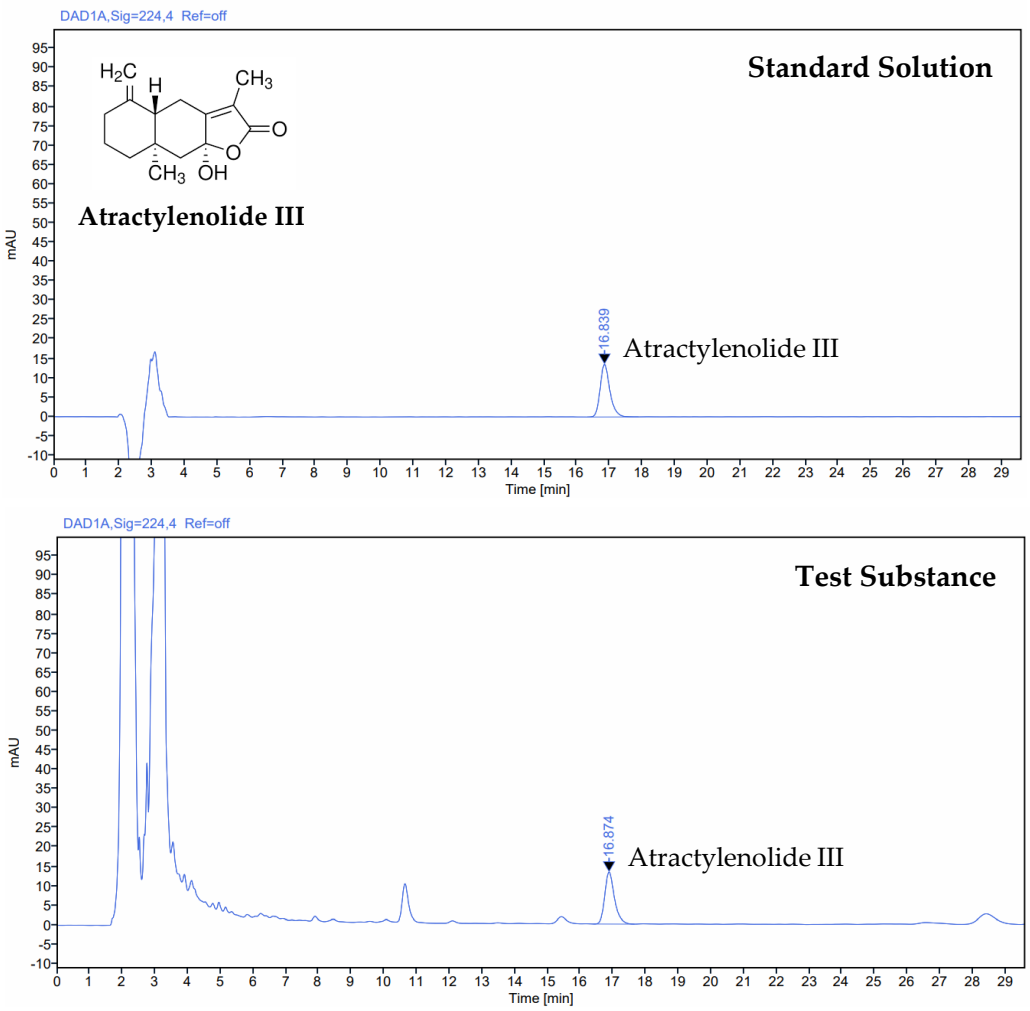


Figure S1. HPLC chromatogram of atractylenolide III in standard solution and *Atractylodes japonica* root extracts.

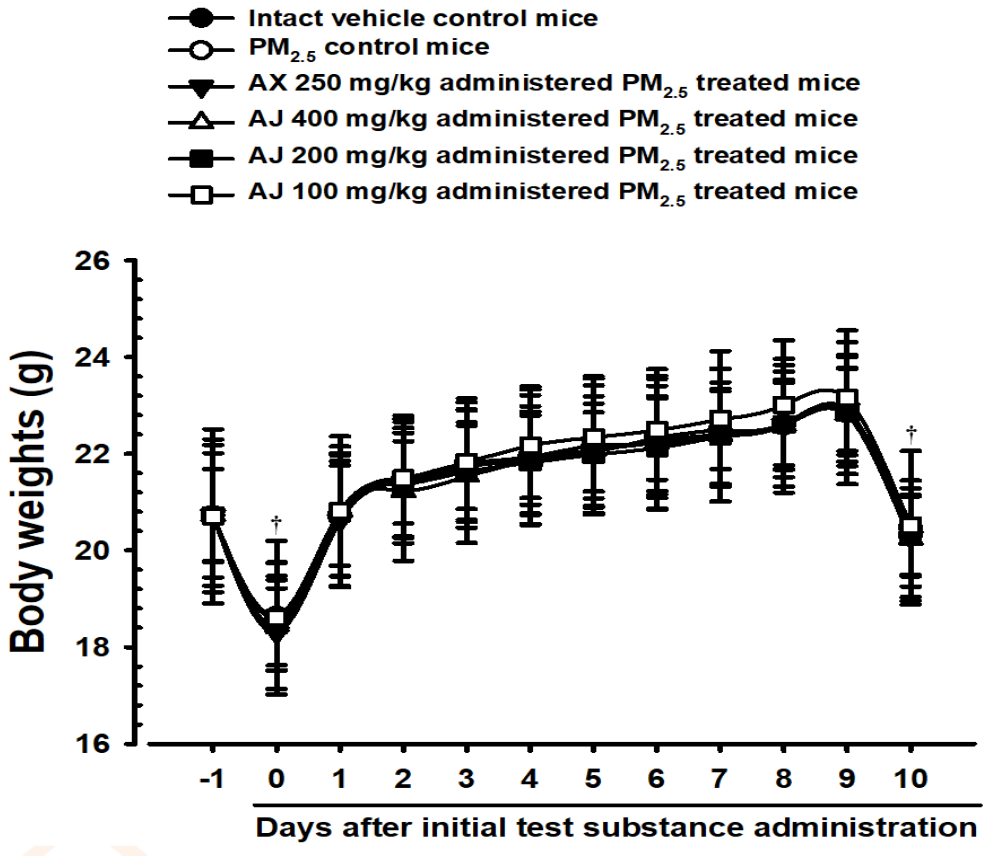


Figure S2. Changes in body weights of intact or $PM_{2.5}$-treated mice with pulmonary injury. Values are presented as means ± S.D. of 10 mice. $PM_{2.5}$ refers to diesel particulate matter NIST 1650b; AX stands for ambroxol hydrochloride, while AJ denotes Atractylodis Rhizoma (root of *Atractylodes japonica* Koidz. ex. Kitam) extracts; Day-1 indicates one day before the initial test substance administration, and Day 10 refers to the day of sacrifice, 24 h after last administration. All animals were fasted overnight before the initial test substance administration and sacrifice (†).