Supplementary File

Soy Biodiesel Emissions Have Reduced Inflammatory Effects Compared to Diesel Emissions in Healthy and Allergic Mice

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Exposure Length / Recovery Time	PM Target ($\mu\text{g}/\text{m}^3$)	Protein ($\mu\text{g}/\text{ml}$)			Albumin ($\mu\text{g}/\text{ml}$)			LDH (U/L)			NAG (U/L)		
		B0	B20	B100	B0	B20	B100	B0	B20	B100	B0	B20	B100
1 day / 2 hours	0	104.9 $\pm$ 13.6	92.8 $\pm$ 5.3	77.3 $\pm$ 7.0	13.6 $\pm$ 1.4	17.0 $\pm$ 0.7	13.4 $\pm$ 0.6	51.9 $\pm$ 8.0	34.4 $\pm$ 2.8	32.4 $\pm$ 4.2	4.9 $\pm$ 0.1	5.4 $\pm$ 0.1	6.2 $\pm$ 0.2#
	50	94.6 $\pm$ 9.6	114.6 $\pm$ 10.6	88.4 $\pm$ 6.5	11.7 $\pm$ 0.5	18.1 $\pm$ 0.7	15.0 $\pm$ 0.7	56.2 $\pm$ 6.7	43.6 $\pm$ 3.3	44.6 $\pm$ 4.6	5.4 $\pm$ 0.2	5.4 $\pm$ 0.2	5.0 $\pm$ 0.2
	150	85.3 $\pm$ 7.2	133.5 $\pm$ 16.3	107.4 $\pm$ 23.1	12.1 $\pm$ 0.2	20.5 $\pm$ 1.2	17.6 $\pm$ 1.8	45.6 $\pm$ 4.2	54.8 $\pm$ 8.4	43.0 $\pm$ 6.1	5.1 $\pm$ 0.1	6.0 $\pm$ 0.4	6.0 $\pm$ 0.4#
	500	97.5 $\pm$ 4.7	113.2 $\pm$ 12.7	106.8 $\pm$ 14.6	12.2 $\pm$ 0.4	20.2 $\pm$ 1.5	14.8 $\pm$ 1.3	49.4 $\pm$ 6.1	44.9 $\pm$ 5.0	38.1 $\pm$ 7.6	5.7 $\pm$ 0.3*	5.7 $\pm$ 0.1	5.3 $\pm$ 0.1
1 day / 24 hours	0	86.1 $\pm$ 9.2	125.8 $\pm$ 19.9	77.8 $\pm$ 7.2	12.4 $\pm$ 0.8	22.4 $\pm$ 2.5	15.1 $\pm$ 1.0	50.2 $\pm$ 6.2	46.2 $\pm$ 3.8	26.3 $\pm$ 4.1	5.4 $\pm$ 0.1	5.6 $\pm$ 0.4	5.1 $\pm$ 0.1
	50	93.4 $\pm$ 8.3	110.0 $\pm$ 7.6	85.4 $\pm$ 11	12.3 $\pm$ 0.5	18.6 $\pm$ 0.5	15.0 $\pm$ 1.0	48.9 $\pm$ 7.4	46.9 $\pm$ 6.0	36.1 $\pm$ 8.8	5.0 $\pm$ 0.1	5.3 $\pm$ 0.1	5.7 $\pm$ 0.3
	150	105.7 $\pm$ 12.4	104.7 $\pm$ 11	72.5 $\pm$ 7.3	12.3 $\pm$ 0.3	18.4 $\pm$ 0.8	13.7 $\pm$ 0.9	53.9 $\pm$ 3.8	46.9 $\pm$ 6.9	28.3 $\pm$ 2.5	5.3 $\pm$ 0.2	4.8 $\pm$ 0.1	5.2 $\pm$ 0.1
	500	99.6 $\pm$ 12.0	118.3 $\pm$ 15.6	89.6 $\pm$ 11.7	11.8 $\pm$ 0.3	19.2 $\pm$ 1.6	14.7 $\pm$ 1.0	50.7 $\pm$ 4.6	40.9 $\pm$ 6.9	32.3 $\pm$ 5.7	5.2 $\pm$ 0.1	4.8 $\pm$ 0.1	5.2 $\pm$ 0.1
5 days / 2 hours	0	94.3 $\pm$ 3.6	72.7 $\pm$ 2.0	81.2 $\pm$ 4.0	13.2 $\pm$ 0.4	15.5 $\pm$ 0.4	16.4 $\pm$ 0.5	55.7 $\pm$ 4.1	38.4 $\pm$ 2.9#	34.7 $\pm$ 3.8	5.6 $\pm$ 0.2	5.0 $\pm$ 0.3	4.8 $\pm$ 0.0
	50	100.1 $\pm$ 12.4	119.0 $\pm$ 18.1*	105.1 $\pm$ 9.0	13.1 $\pm$ 1.1	17.7 $\pm$ 1.7	18.5 $\pm$ 0.8	60.0 $\pm$ 8.7	63.0 $\pm$ 9.5	51.0 $\pm$ 5.7	6.1 $\pm$ 0.2	5.2 $\pm$ 0.3	5.9 $\pm$ 0.3*§
	150	87.3 $\pm$ 6.3	86.6 $\pm$ 2.9	95.1 $\pm$ 9.7	12.3 $\pm$ 0.6	14.1 $\pm$ 0.7	16.8 $\pm$ 1.0	43.8 $\pm$ 5.2	41.7 $\pm$ 2.0#	40.3 $\pm$ 5.0	5.3 $\pm$ 0.2#	4.2 $\pm$ 0.3	4.9 $\pm$ 0.1
	500	103.8 $\pm$ 5.1	113.3 $\pm$ 10.3	99.1 $\pm$ 6.7	13.1 $\pm$ 0.5	16.5 $\pm$ 1.7	17.6 $\pm$ 0.7	56.2 $\pm$ 4.1	47.7 $\pm$ 3.7	44.8 $\pm$ 3.7	5.2 $\pm$ 0.1#	5.4 $\pm$ 0.4§	5.8 $\pm$ 0.2*§
5 days / 24 hours	0	97.3 $\pm$ 3.8	91.5 $\pm$ 3.5	88.6 $\pm$ 6.3	13.5 $\pm$ 0.5	18.8 $\pm$ 0.4	15.2 $\pm$ 0.6	54.4 $\pm$ 4.6	41.6 $\pm$ 1.8	40.1 $\pm$ 2.4	5.0 $\pm$ 0.1	4.9 $\pm$ 0.1	5.2 $\pm$ 0.1
	50	111.5 $\pm$ 7.1	88.8 $\pm$ 9.0	74.9 $\pm$ 4.4	12.8 $\pm$ 0.5	16.0 $\pm$ 0.8*	13.6 $\pm$ 0.6	53.6 $\pm$ 5.3	38.2 $\pm$ 3.5	37.1 $\pm$ 2.3	5.5 $\pm$ 0.3	5.6 $\pm$ 0.5	5.2 $\pm$ 0.1
	150	124.6 $\pm$ 12.2	87.1 $\pm$ 3.3	71.1 $\pm$ 2.7	13.2 $\pm$ 0.6	16.3 $\pm$ 0.5*	14.1 $\pm$ 0.7	62.3 $\pm$ 5.4	43.7 $\pm$ 3.0	37.0 $\pm$ 4.5	5.9 $\pm$ 0.4	5.0 $\pm$ 0.1	4.9 $\pm$ 0.0
	500	97.9 $\pm$ 5.9	90.8 $\pm$ 6.5	74.5 $\pm$ 12.9	12.3 $\pm$ 0.3	17.1 $\pm$ 0.5	13.4 $\pm$ 1.8	55.0 $\pm$ 7.6	47.3 $\pm$ 4.2	38.1 $\pm$ 8.2	5.7 $\pm$ 0.1	5.0 $\pm$ 0.1	4.9 $\pm$ 0.1
4 weeks / 2 hours	0	83.3 $\pm$ 16.5	77.9 $\pm$ 3.2	61.3 $\pm$ 6.7	10.5 $\pm$ 0.6	12.3 $\pm$ 0.7§	12.6 $\pm$ 1.6	35.9 $\pm$ 3.0	29.1 $\pm$ 2.6	26.0 $\pm$ 2.4	4.3 $\pm$ 0.2	7.3 $\pm$ 0.2	5.5 $\pm$ 0.1
	50	70.1 $\pm$ 2.4	90.3 $\pm$ 10.4	84.3 $\pm$ 12.4	8.8 $\pm$ 0.5	12.2 $\pm$ 1.3§	14.7 $\pm$ 0.9	39.4 $\pm$ 1.3	37.4 $\pm$ 3.6	35.1 $\pm$ 8.1	3.6 $\pm$ 0.2	6.7 $\pm$ 0.2	5.6 $\pm$ 0.1
	150	64.5 $\pm$ 5.6	119.0 $\pm$ 9.0*	69.5 $\pm$ 2.4	7.7 $\pm$ 0.8*	16.1 $\pm$ 0.8	12.9 $\pm$ 0.7	36.2 $\pm$ 1.9	50.0 $\pm$ 5.6*	25.8 $\pm$ 1.6	3.9 $\pm$ 0.2	6.8 $\pm$ 0.1	5.2 $\pm$ 0.1
	500	78.1 $\pm$ 5.2	107.6 $\pm$ 7.9	73.9 $\pm$ 3.5	8.4 $\pm$ 0.4	14.3 $\pm$ 0.6	14.4 $\pm$ 0.5	37.5 $\pm$ 3.3	41.6 $\pm$ 5.6	30.0 $\pm$ 2.1	4.3 $\pm$ 0.3	6.8 $\pm$ 0.2	5.8 $\pm$ 0.1§
4 weeks / 24 hours	0	89.2 $\pm$ 10.6	92.2 $\pm$ 6.5	75.0 $\pm$ 4.1	9.8 $\pm$ 0.4	13.0 $\pm$ 0.9	13.0 $\pm$ 0.8	44.4 $\pm$ 3.8	41.7 $\pm$ 4.1	27.2 $\pm$ 1.4	4.1 $\pm$ 0.1	7.4 $\pm$ 0.4	6.2 $\pm$ 0.2
	50	97.8 $\pm$ 7.7	99.7 $\pm$ 8.7	96.1 $\pm$ 18.1	10.9 $\pm$ 0.6	14.1 $\pm$ 0.6	13.3 $\pm$ 1.4	47.8 $\pm$ 5.3	33.5 $\pm$ 5.6	29.1 $\pm$ 2.5	4.4 $\pm$ 0.3	7.1 $\pm$ 0.3	6.0 $\pm$ 0.1
	150	96.0 $\pm$ 8.2	111.8 $\pm$ 13.8	89.6 $\pm$ 8.7	9.8 $\pm$ 0.4	13.9 $\pm$ 0.8	13.8 $\pm$ 1.6	43.5 $\pm$ 3.7	40.5 $\pm$ 4.1	30.1 $\pm$ 3.3	4.6 $\pm$ 0.2	6.7 $\pm$ 0.0	5.9 $\pm$ 0.1
	500	90.5 $\pm$ 3.2	86.5 $\pm$ 4.6	87.5 $\pm$ 3.5	9.9 $\pm$ 0.4	11.7 $\pm$ 0.4	13.3 $\pm$ 1.1	45.4 $\pm$ 2.8	36.6 $\pm$ 2.8	31.5 $\pm$ 1.5	3.9 $\pm$ 0.2	6.7 $\pm$ 0.1	5.9 $\pm$ 0.1

Supplemental Table 1. Levels of protein, albumin, LDH, and NAG in BAL supernatant of normal Balb/cJ mice exposed to B0, B20, and B100 fuel emissions for 1 day, 5 days, or 4 weeks, and necropsied after 2 or 24 hours recovery. Results show means and SEM of 7-8 mice/group. * $P < 0.05$ vs. the 0 $\mu\text{g}/\text{m}^3$ target (air control) group of the same fuel and time point. † $P < 0.05$ vs. all other target groups of the same fuel and time point. # $P < 0.05$ vs. the 50 $\mu\text{g}/\text{m}^3$ target group of the same fuel and time point. § $P < 0.05$ vs. the 150 $\mu\text{g}/\text{m}^3$ target group of the same fuel and time point.

Exposure Length / Recovery Time	PM Target ($\mu\text{g}/\text{m}^3$)	WBC			Lym Number			% Lym			RBC		
		B0	B20	B100	B0	B20	B100	B0	B20	B100	B0	B20	B100
1 day / 2 hours	0	2.9 $\pm$ 0.5	2.9 $\pm$ 0.4	3.0 $\pm$ 0.3	2.7 $\pm$ 0.5	2.3 $\pm$ 0.3	2.4 $\pm$ 0.3	90.2 $\pm$ 1.2	79.8 $\pm$ 4.2	81.0 $\pm$ 2.5	7.7 $\pm$ 0.1	7.4 $\pm$ 0.1	7.2 $\pm$ 0.1
	50	2.0 $\pm$ 0.4	2.6 $\pm$ 0.3	4.6 $\pm$ 1.0	1.8 $\pm$ 0.3	2.2 $\pm$ 0.2	3.6 $\pm$ 0.8	87.9 $\pm$ 1.4	84.5 $\pm$ 1.6	79.6 $\pm$ 3.4	7.7 $\pm$ 0.1	7.6 $\pm$ 0.1	7.1 $\pm$ 0.2
	150	2.0 $\pm$ 0.4	3.0 $\pm$ 0.5	3.5 $\pm$ 0.7	1.8 $\pm$ 0.4	2.5 $\pm$ 0.4	2.7 $\pm$ 0.5	86.0 $\pm$ 1.0	84.3 $\pm$ 1.7	77.3 $\pm$ 1.1	7.2 $\pm$ 0.1	7.1 $\pm$ 0.4	7.3 $\pm$ 0.2
	500	2.2 $\pm$ 0.3	2.7 $\pm$ 0.2	2.5 $\pm$ 0.4	1.9 $\pm$ 0.2	2.4 $\pm$ 0.2	2.0 $\pm$ 0.4	88.3 $\pm$ 1.9	85.5 $\pm$ 0.9	78.1 $\pm$ 1.7	7.6 $\pm$ 0.3	7.7 $\pm$ 0.1	7.2 $\pm$ 0.2
1 day / 24 hours	0	2.6 $\pm$ 0.4	2.4 $\pm$ 0.3	3.5 $\pm$ 0.3	2.3 $\pm$ 0.4	2.1 $\pm$ 0.3	2.7 $\pm$ 0.3	89.9 $\pm$ 1.7	84.5 $\pm$ 0.9	76.6 $\pm$ 3.7	7.3 $\pm$ 0.2	7.5 $\pm$ 0.2	6.7 $\pm$ 0.2
	50	2.8 $\pm$ 0.3	3.0 $\pm$ 0.9	3.1 $\pm$ 0.4	2.5 $\pm$ 0.3	2.4 $\pm$ 0.6	2.5 $\pm$ 0.4	90.0 $\pm$ 1.1	81.2 $\pm$ 3.0	77.8 $\pm$ 1.6	7.9 $\pm$ 0.1	7.2 $\pm$ 0.2	6.9 $\pm$ 0.1
	150	2.7 $\pm$ 0.5	3.0 $\pm$ 0.4	3.5 $\pm$ 0.5	2.4 $\pm$ 0.5	2.4 $\pm$ 0.3	2.7 $\pm$ 0.4	87.1 $\pm$ 1.5	81.4 $\pm$ 2.2	77.7 $\pm$ 1.7	7.8 $\pm$ 0.2	7.4 $\pm$ 0.1	6.6 $\pm$ 0.3
	500	3.6 $\pm$ 0.6	2.8 $\pm$ 0.5	3.1 $\pm$ 0.2	3.1 $\pm$ 0.4	2.3 $\pm$ 0.4	2.4 $\pm$ 0.2	87.4 $\pm$ 2.2	83.1 $\pm$ 2.2	77.1 $\pm$ 1.9	7.2 $\pm$ 0.3	7.2 $\pm$ 0.2	6.5 $\pm$ 0.2
5 days / 2 hours	0	2.2 $\pm$ 0.4	2.4 $\pm$ 0.7	2.7 $\pm$ 0.4	2.0 $\pm$ 0.3	1.9 $\pm$ 0.4	2.2 $\pm$ 0.4	90.8 $\pm$ 0.8	80.9 $\pm$ 2.9	78.5 $\pm$ 2.0	7.6 $\pm$ 0.2	7.3 $\pm$ 0.3	6.9 $\pm$ 0.2
	50	3.3 $\pm$ 0.7	2.1 $\pm$ 0.2	2.8 $\pm$ 0.2	2.9 $\pm$ 0.6	1.9 $\pm$ 0.2	2.1 $\pm$ 0.2	90.0 $\pm$ 0.8	89.2 $\pm$ 1.8	73.3 $\pm$ 2.9	7.5 $\pm$ 0.1	7.8 $\pm$ 0.1	7.2 $\pm$ 0.3
	150	2.2 $\pm$ 0.4	2.3 $\pm$ 0.3	3.0 $\pm$ 0.2	2.1 $\pm$ 0.4	1.9 $\pm$ 0.2	2.2 $\pm$ 0.2	90.1 $\pm$ 1.3	85.3 $\pm$ 3.0	71.3 $\pm$ 2.7	7.6 $\pm$ 0.2	7.5 $\pm$ 0.1	7.1 $\pm$ 0.2
	500	2.9 $\pm$ 0.4	2.8 $\pm$ 0.7	2.5 $\pm$ 0.2	2.6 $\pm$ 0.4	2.2 $\pm$ 0.5	1.8 $\pm$ 0.2	90.0 $\pm$ 2.2	82.8 $\pm$ 2.5	74.6 $\pm$ 1.6	7.6 $\pm$ 0.3	7.5 $\pm$ 0.2	7.0 $\pm$ 0.3
5 days / 24 hours	0	2.9 $\pm$ 0.3	2.9 $\pm$ 0.5	2.2 $\pm$ 0.1	2.7 $\pm$ 0.3	2.4 $\pm$ 0.3	1.7 $\pm$ 0.1	93.6 $\pm$ 1.3	85.1 $\pm$ 2.2	76.4 $\pm$ 1.5	7.9 $\pm$ 0.3	7.3 $\pm$ 0.3	7.1 $\pm$ 0.3
	50	3.0 $\pm$ 0.5	2.8 $\pm$ 1.0	1.4 $\pm$ 0.1	2.8 $\pm$ 0.5	2.5 $\pm$ 0.9	1.0 $\pm$ 0.1	91.9 $\pm$ 1.6	86.1 $\pm$ 0.9	71.3 $\pm$ 2.0	7.6 $\pm$ 0.2	7.1 $\pm$ 0.3	7.3 $\pm$ 0.1
	150	3.0 $\pm$ 0.4	3.0 $\pm$ 0.4	2.0 $\pm$ 0.3	2.7 $\pm$ 0.4	2.5 $\pm$ 0.3	1.6 $\pm$ 0.3	90.2 $\pm$ 2.1	85.2 $\pm$ 2.4	75.8 $\pm$ 3.1	7.8 $\pm$ 0.2	7.5 $\pm$ 0.1	7.2 $\pm$ 0.2
	500	2.6 $\pm$ 0.3	2.6 $\pm$ 0.4	2.0 $\pm$ 0.3	2.4 $\pm$ 0.2	2.1 $\pm$ 0.3	1.5 $\pm$ 0.3	91.5 $\pm$ 1.5	84.1 $\pm$ 2.5	73.3 $\pm$ 1.8	7.5 $\pm$ 0.2	7.1 $\pm$ 0.4	7.0 $\pm$ 0.2
4 weeks / 2 hours	0	2.2 $\pm$ 0.2	1.9 $\pm$ 0.3	2.4 $\pm$ 0.3	1.8 $\pm$ 0.2	1.6 $\pm$ 0.2	1.9 $\pm$ 0.2	81.4 $\pm$ 2.5	84.1 $\pm$ 2.2	80.7 $\pm$ 1.7	7.4 $\pm$ 0.2	7.4 $\pm$ 0.2	7.6 $\pm$ 0.2
	50	2.3 $\pm$ 0.4	2.0 $\pm$ 0.2	2.2 $\pm$ 0.3	2.0 $\pm$ 0.4	1.7 $\pm$ 0.2	1.6 $\pm$ 0.3	82.9 $\pm$ 3.9	85.0 $\pm$ 2.6	74.6 $\pm$ 1.5*	7.8 $\pm$ 0.3	7.1 $\pm$ 0.2	7.3 $\pm$ 0.2
	150	2.0 $\pm$ 0.2	1.9 $\pm$ 0.2	2.1 $\pm$ 0.2	1.6 $\pm$ 0.2	1.7 $\pm$ 0.2	1.8 $\pm$ 0.2	79.4 $\pm$ 4.1	79.2 $\pm$ 7.0	78.7 $\pm$ 1.2	7.7 $\pm$ 0.1	7.7 $\pm$ 0.2	7.7 $\pm$ 0.2
	500	1.5 $\pm$ 0.2	2.2 $\pm$ 0.2	2.1 $\pm$ 0.4	1.2 $\pm$ 0.2	1.8 $\pm$ 0.2	1.7 $\pm$ 0.3	76.7 $\pm$ 3.1	84.5 $\pm$ 2.6	72.9 $\pm$ 1.5*	7.9 $\pm$ 0.3	7.7 $\pm$ 0.1	7.3 $\pm$ 0.2
4 weeks / 24 hours	0	3.0 $\pm$ 0.1	1.7 $\pm$ 0.2	2.3 $\pm$ 0.3	2.2 $\pm$ 0.1	1.5 $\pm$ 0.2	1.6 $\pm$ 0.2	74.5 $\pm$ 2.0	86.9 $\pm$ 1.1	70.3 $\pm$ 2.7	7.7 $\pm$ 0.1	7.4 $\pm$ 0.1	7.2 $\pm$ 0.2
	50	2.5 $\pm$ 0.3	2.1 $\pm$ 0.2	1.9 $\pm$ 0.2	1.7 $\pm$ 0.3	1.9 $\pm$ 0.2	1.4 $\pm$ 0.2	70.7 $\pm$ 2.5	87.2 $\pm$ 1.8	72.9 $\pm$ 2.3	7.5 $\pm$ 0.1	7.5 $\pm$ 0.1	7.4 $\pm$ 0.2
	150	2.0 $\pm$ 0.1	1.9 $\pm$ 0.3	2.0 $\pm$ 0.3	1.5 $\pm$ 0.1*	1.5 $\pm$ 0.2	1.4 $\pm$ 0.3	73.0 $\pm$ 2.2	79.5 $\pm$ 3.3	71.4 $\pm$ 1.6	7.7 $\pm$ 0.1	7.3 $\pm$ 0.1	7.4 $\pm$ 0.2
	500	2.8 $\pm$ 0.4	2.1 $\pm$ 0.3	2.2 $\pm$ 0.1	1.9 $\pm$ 0.2	1.8 $\pm$ 0.3	1.6 $\pm$ 0.1	70.2 $\pm$ 3.0	86.7 $\pm$ 1.6	71.4 $\pm$ 2.6	7.5 $\pm$ 0.2	7.2 $\pm$ 0.2	7.4 $\pm$ 0.1

Supplemental Table 2A. Hematological analysis of blood from normal Balb/cJ mice exposed to B0, B20, and B100 fuel emissions for 1 day, 5 days, or 4 weeks, and necropsied after 2 or 24 hours recovery: Shown are WBC ($\times 10^3/\mu\text{l}$), lymphocytes ($\times 10^3/\mu\text{l}$), % lymphocytes in WBC, and RBC ($\times 10^6/\mu\text{l}$). Results show means and SEM of 7-8 mice/group. * $P < 0.05$ vs. the 0 $\mu\text{g}/\text{m}^3$ target (air control) group of the same fuel and time point.

Exposure Length / Recovery Time	PM Target ($\mu\text{g}/\text{m}^3$)	Hgb			Hct			Platelets		
		B0	B20	B100	B0	B20	B100	B0	B20	B100
1 day / 2 hours	0	12.0 $\pm$ 0.1	12.3 $\pm$ 0.1	11.6 $\pm$ 0.3	38.9 $\pm$ 0.4	36.7 $\pm$ 0.7	35.4 $\pm$ 0.8	704.5 $\pm$ 46.0	679.8 $\pm$ 67.1	467.0 $\pm$ 14.0
	50	12.0 $\pm$ 0.2	12.5 $\pm$ 0.1	11.4 $\pm$ 0.3	38.8 $\pm$ 0.7	38.3 $\pm$ 0.7	34.8 $\pm$ 1.0	716.0 $\pm$ 57.0	593.0 $\pm$ 68.8	420.7 $\pm$ 22.2
	150	11.3 $\pm$ 0.2	11.7 $\pm$ 0.7	11.8 $\pm$ 0.4	37.0 $\pm$ 0.5	34.9 $\pm$ 2.2	35.6 $\pm$ 0.8	560.4 $\pm$ 56.8	579.5 $\pm$ 75.9	442.9 $\pm$ 19.1
	500	12.1 $\pm$ 0.4	12.7 $\pm$ 0.2	11.7 $\pm$ 0.3	38.0 $\pm$ 1.5	38.4 $\pm$ 0.7	35.4 $\pm$ 1.0	712.9 $\pm$ 73.9	597.4 $\pm$ 53.1	503.7 $\pm$ 38.4
1 day / 24 hours	0	11.4 $\pm$ 0.4	12.1 $\pm$ 0.4	11.4 $\pm$ 0.3	36.6 $\pm$ 1.2	38.0 $\pm$ 1.4	32.7 $\pm$ 1.1	742.1 $\pm$ 73.8	589.8 $\pm$ 67.0	469.3 $\pm$ 51.5
	50	12.5 $\pm$ 0.3	11.9 $\pm$ 0.4	11.7 $\pm$ 0.2	40.2 $\pm$ 0.8	36.7 $\pm$ 1.1	33.5 $\pm$ 0.8	764.0 $\pm$ 87.9	413.8 $\pm$ 19.0	515.7 $\pm$ 51.8
	150	12.2 $\pm$ 0.4	12.2 $\pm$ 0.3	11.2 $\pm$ 0.4	39.4 $\pm$ 1.0	37.2 $\pm$ 0.5	31.9 $\pm$ 1.5	633.3 $\pm$ 70.9	514.6 $\pm$ 105.8	409.1 $\pm$ 32.4
	500	11.4 $\pm$ 0.5	12.0 $\pm$ 0.3	11.1 $\pm$ 0.5	36.6 $\pm$ 1.8	36.6 $\pm$ 1.1	31.6 $\pm$ 1.2	686.3 $\pm$ 84.7	599.4 $\pm$ 86.6	474.8 $\pm$ 52.8
5 days / 2 hours	0	12.0 $\pm$ 0.2	12.4 $\pm$ 0.3	12.4 $\pm$ 0.3	38.3 $\pm$ 1.1	37.0 $\pm$ 1.4	34.1 $\pm$ 1.0	635.1 $\pm$ 64.5	519.9 $\pm$ 58.1	532.9 $\pm$ 38.2
	50	11.7 $\pm$ 0.2	12.8 $\pm$ 0.3	12.8 $\pm$ 0.5	38.4 $\pm$ 0.5	39.2 $\pm$ 1.0	35.1 $\pm$ 1.3	637.6 $\pm$ 43.1	732.3 $\pm$ 80.0	481.4 $\pm$ 30.0
	150	12.0 $\pm$ 0.4	12.2 $\pm$ 0.1	12.6 $\pm$ 0.4	38.9 $\pm$ 1.2	37.8 $\pm$ 0.6	35.0 $\pm$ 1.1	696.5 $\pm$ 79.0	691.1 $\pm$ 68.0	505.6 $\pm$ 67.9
	500	11.9 $\pm$ 0.4	12.4 $\pm$ 0.4	12.3 $\pm$ 0.5	38.8 $\pm$ 1.4	37.6 $\pm$ 1.1	34.0 $\pm$ 1.3	682.6 $\pm$ 73.8	740.8 $\pm$ 57.4	557.4 $\pm$ 27.2
5 days / 24 hours	0	12.1 $\pm$ 0.5	12.1 $\pm$ 0.5	12.0 $\pm$ 0.4	39.3 $\pm$ 1.6	37.1 $\pm$ 1.6	34.7 $\pm$ 1.4	780.3 $\pm$ 35.5	649.3 $\pm$ 66.3	637.6 $\pm$ 58.0
	50	11.7 $\pm$ 0.3	12.0 $\pm$ 0.5	12.3 $\pm$ 0.1	38.4 $\pm$ 1.1	36.4 $\pm$ 1.6	35.6 $\pm$ 0.5	640.4 $\pm$ 70.8	458.1 $\pm$ 22.9	584.9 $\pm$ 51.2
	150	13.0 $\pm$ 0.8	12.4 $\pm$ 0.2	12.1 $\pm$ 0.3	42.2 $\pm$ 2.8	38.3 $\pm$ 0.6	35.1 $\pm$ 1.0	557.0 $\pm$ 56.4	507.4 $\pm$ 54.9	578.4 $\pm$ 50.7
	500	11.8 $\pm$ 0.3	11.5 $\pm$ 0.7	11.5 $\pm$ 0.6	38.5 $\pm$ 1.0	35.0 $\pm$ 2.3	34.3 $\pm$ 1.2	590.4 $\pm$ 74.4	573.8 $\pm$ 78.4	563.3 $\pm$ 39.0
4 weeks / 2 hours	0	11.7 $\pm$ 0.3	11.8 $\pm$ 0.4	13.0 $\pm$ 0.2	36.9 $\pm$ 1.0	36.7 $\pm$ 1.2	37.0 $\pm$ 0.9	699.3 $\pm$ 100.7	670.6 $\pm$ 54.7	550.1 $\pm$ 48.1
	50	11.8 $\pm$ 0.4	11.4 $\pm$ 0.3	12.4 $\pm$ 0.3	38.9 $\pm$ 1.6	35.3 $\pm$ 1.1	35.4 $\pm$ 0.9	639.3 $\pm$ 71.6	680.2 $\pm$ 65.5	570.7 $\pm$ 57.6
	150	12.5 $\pm$ 0.3	12.5 $\pm$ 0.4	13.2 $\pm$ 0.3	38.4 $\pm$ 0.9	38.5 $\pm$ 1.0	37.3 $\pm$ 0.8	596.6 $\pm$ 70.8	825.6 $\pm$ 47.2	614.1 $\pm$ 56.1
	500	13.0 $\pm$ 0.5	12.4 $\pm$ 0.2	12.4 $\pm$ 0.4	39.0 $\pm$ 1.8	38.7 $\pm$ 0.5	35.4 $\pm$ 1.2	533.7 $\pm$ 56.0	658.3 $\pm$ 87.8	494.0 $\pm$ 30.3
4 weeks / 24 hours	0	13.2 $\pm$ 0.2	12.2 $\pm$ 0.1	12.6 $\pm$ 0.5	37.4 $\pm$ 0.6	37.1 $\pm$ 0.5	35.2 $\pm$ 1.2	610.6 $\pm$ 64.2	731.0 $\pm$ 67.3	518.3 $\pm$ 37.1
	50	12.8 $\pm$ 0.2	12.3 $\pm$ 0.2	12.8 $\pm$ 0.3	36.3 $\pm$ 0.4	37.4 $\pm$ 0.8	36.2 $\pm$ 0.9	524.0 $\pm$ 35.1	568.3 $\pm$ 62.2	532.1 $\pm$ 84.4
	150	13.2 $\pm$ 0.2	12.0 $\pm$ 0.2	12.6 $\pm$ 0.3	37.4 $\pm$ 0.7	36.6 $\pm$ 0.3	36.0 $\pm$ 1.2	495.0 $\pm$ 15.8	605.5 $\pm$ 50.7	495.1 $\pm$ 40.6
	500	12.9 $\pm$ 0.4	12.1 $\pm$ 0.4	12.5 $\pm$ 0.3	36.8 $\pm$ 1.0	36.3 $\pm$ 1.3	35.6 $\pm$ 0.7	558.1 $\pm$ 47.7	731.0 $\pm$ 65.7	484.9 $\pm$ 46.8

Supplemental Table 2B. Hematological analysis of blood from normal Balb/cJ mice exposed to B0, B20, and B100 fuel emissions for 1 day, 5 days, or 4 weeks, and necropsied after 2 or 24 hours recovery: Shown are Hgb (g/dl), Hct (%), and platelets ($\times 10^3/\mu\text{l}$). Results show means and SEM of 7-8 mice/group. No significant differences from the 0 $\mu\text{g}/\text{m}^3$ target (air control) group of the same fuel and time point were found with these parameters.

Exposure Length / Recovery Time	PM Target ($\mu\text{g}/\text{m}^3$)	MCH			MCHC			MCV		
		B0	B20	B100	B0	B20	B100	B0	B20	B100
1 day / 2 hours	0	15.7 $\pm$ 0.1	16.7 $\pm$ 0.2	16.1 $\pm$ 0.2	30.9 $\pm$ 0.2	33.5 $\pm$ 0.5	32.7 $\pm$ 0.5	50.7 $\pm$ 0.2	50.0 $\pm$ 0.2	49.1 $\pm$ 0.2
	50	15.6 $\pm$ 0.1	16.4 $\pm$ 0.2	16.0 $\pm$ 0.2	30.9 $\pm$ 0.1	32.7 $\pm$ 0.5	32.7 $\pm$ 0.5	50.6 $\pm$ 0.1	50.3 $\pm$ 0.3	48.8 $\pm$ 0.2
	150	15.7 $\pm$ 0.1	16.5 $\pm$ 0.2	16.2 $\pm$ 0.2	30.7 $\pm$ 0.2	33.5 $\pm$ 0.6	33.0 $\pm$ 0.4	51.2 $\pm$ 0.3	49.9 $\pm$ 0.2	48.7 $\pm$ 0.2
	500	15.9 $\pm$ 0.2	16.5 $\pm$ 0.1	16.1 $\pm$ 0.2	32.1 $\pm$ 1.0	33.1 $\pm$ 0.2	32.7 $\pm$ 0.5	49.8 $\pm$ 1.0	49.7 $\pm$ 0.2	49.4 $\pm$ 0.2
1 day / 24 hours	0	15.8 $\pm$ 0.1	16.1 $\pm$ 0.1	17.0 $\pm$ 0.2	31.2 $\pm$ 0.3	31.9 $\pm$ 0.2	34.8 $\pm$ 0.4	50.6 $\pm$ 0.3	50.3 $\pm$ 0.4	48.9 $\pm$ 0.1
	50	15.8 $\pm$ 0.1	16.5 $\pm$ 0.2	17.1 $\pm$ 0.2	31.2 $\pm$ 0.4	32.5 $\pm$ 0.4	35.1 $\pm$ 0.4	50.9 $\pm$ 0.3	50.9 $\pm$ 0.3	48.6 $\pm$ 0.2
	150	15.8 $\pm$ 0.2	16.3 $\pm$ 0.2	17.2 $\pm$ 0.2	31.1 $\pm$ 0.3	32.4 $\pm$ 0.5	35.2 $\pm$ 0.5	50.7 $\pm$ 0.3	49.9 $\pm$ 0.3	48.4 $\pm$ 0.2
	500	15.9 $\pm$ 0.1	16.5 $\pm$ 0.2	17.1 $\pm$ 0.2	31.3 $\pm$ 0.4	32.7 $\pm$ 0.5	35.1 $\pm$ 0.4	50.9 $\pm$ 0.5	50.3 $\pm$ 0.5	48.8 $\pm$ 0.1
5 days / 2 hours	0	15.7 $\pm$ 0.1	17.0 $\pm$ 0.2	18.0 $\pm$ 0.1	31.3 $\pm$ 0.6	33.6 $\pm$ 0.6	36.5 $\pm$ 0.4	50.2 $\pm$ 0.8	50.7 $\pm$ 0.3	49.1 $\pm$ 0.3
	50	15.6 $\pm$ 0.1	16.5 $\pm$ 0.2	17.7 $\pm$ 0.2	30.5 $\pm$ 0.1	32.7 $\pm$ 0.3	36.4 $\pm$ 0.4	51.0 $\pm$ 0.4	50.5 $\pm$ 0.3	49.3 $\pm$ 0.1
	150	15.8 $\pm$ 0.1	16.4 $\pm$ 0.1*	17.6 $\pm$ 0.1	30.8 $\pm$ 0.1	32.4 $\pm$ 0.2	36.0 $\pm$ 0.3	51.4 $\pm$ 0.2	50.3 $\pm$ 0.3	48.6 $\pm$ 0.0
	500	15.8 $\pm$ 0.1	16.5 $\pm$ 0.1	17.6 $\pm$ 0.1	30.8 $\pm$ 0.1	32.9 $\pm$ 0.2	36.1 $\pm$ 0.2	51.4 $\pm$ 0.2	50.5 $\pm$ 0.2	48.9 $\pm$ 0.2
5 days / 24 hours	0	15.3 $\pm$ 0.1	16.6 $\pm$ 0.2	17.0 $\pm$ 0.2	30.7 $\pm$ 0.2	32.8 $\pm$ 0.4	34.8 $\pm$ 0.5	49.8 $\pm$ 0.4	50.6 $\pm$ 0.1	48.6 $\pm$ 0.1
	50	15.6 $\pm$ 0.2	16.8 $\pm$ 0.1	16.8 $\pm$ 0.1	30.5 $\pm$ 0.1	32.9 $\pm$ 0.3	34.6 $\pm$ 0.2	50.7 $\pm$ 0.3	51.0 $\pm$ 0.3	48.6 $\pm$ 0.2
	150	15.8 $\pm$ 0.1	16.4 $\pm$ 0.1	16.9 $\pm$ 0.2	30.9 $\pm$ 0.4	32.4 $\pm$ 0.2	34.6 $\pm$ 0.5	51.3 $\pm$ 0.4*	50.7 $\pm$ 0.2	48.8 $\pm$ 0.2
	500	15.6 $\pm$ 0.1	16.2 $\pm$ 0.1	16.5 $\pm$ 0.4	30.7 $\pm$ 0.2	32.6 $\pm$ 0.3	33.7 $\pm$ 0.7	51.0 $\pm$ 0.1	49.9 $\pm$ 0.3#	48.8 $\pm$ 0.2
4 weeks / 2 hours	0	15.8 $\pm$ 0.2	16.0 $\pm$ 0.2	17.1 $\pm$ 0.2	31.7 $\pm$ 0.7	32.2 $\pm$ 0.5	35.2 $\pm$ 0.4	50.3 $\pm$ 0.3	49.8 $\pm$ 0.3	48.6 $\pm$ 0.3
	50	15.3 $\pm$ 0.8	16.2 $\pm$ 0.1	17.0 $\pm$ 0.2	30.9 $\pm$ 1.8	32.4 $\pm$ 0.3	35.2 $\pm$ 0.4	49.8 $\pm$ 0.4	49.9 $\pm$ 0.3	48.6 $\pm$ 0.2
	150	16.3 $\pm$ 0.3	16.2 $\pm$ 0.1	17.2 $\pm$ 0.1	32.6 $\pm$ 0.7	32.4 $\pm$ 0.3	35.4 $\pm$ 0.4	50.1 $\pm$ 0.5	50.0 $\pm$ 0.1	48.8 $\pm$ 0.2
	500	16.5 $\pm$ 0.1	16.1 $\pm$ 0.1	17.2 $\pm$ 0.2	33.5 $\pm$ 0.5	32.2 $\pm$ 0.2	35.4 $\pm$ 0.6	49.3 $\pm$ 0.4	50.2 $\pm$ 0.3	49.2 $\pm$ 0.3
4 weeks / 24 hours	0	17.2 $\pm$ 0.1	16.6 $\pm$ 0.1	17.3 $\pm$ 0.2	35.2 $\pm$ 0.3	33.0 $\pm$ 0.3	35.7 $\pm$ 0.5	48.7 $\pm$ 0.2	50.3 $\pm$ 0.3	48.4 $\pm$ 0.2
	50	17.1 $\pm$ 0.1	16.5 $\pm$ 0.2	17.3 $\pm$ 0.2	35.2 $\pm$ 0.2	33.0 $\pm$ 0.3	35.5 $\pm$ 0.4	48.7 $\pm$ 0.3	50.2 $\pm$ 0.2	48.7 $\pm$ 0.2
	150	17.2 $\pm$ 0.1	16.4 $\pm$ 0.2	17.2 $\pm$ 0.3	35.3 $\pm$ 0.3	32.9 $\pm$ 0.4	35.0 $\pm$ 0.5	48.7 $\pm$ 0.2	50.0 $\pm$ 0.2	48.5 $\pm$ 0.1
	500	17.2 $\pm$ 0.1	16.8 $\pm$ 0.1	16.9 $\pm$ 0.3	35.1 $\pm$ 0.1	33.2 $\pm$ 0.4	35.0 $\pm$ 0.5	49.0 $\pm$ 0.3	50.5 $\pm$ 0.4	48.7 $\pm$ 0.2

Supplemental Table 2C. Hematological analysis of blood from normal Balb/cJ mice exposed to B0, B20, and B100 fuel emissions for 1 day, 5 days, or 4 weeks, and necropsied after 2 or 24 hours recovery: Shown are MCH (pg/cell), MCHC (g/dl), and MCV (fl). Results show means and SEM of 7-8 mice/group. * $P < 0.05$ vs. the 0 $\mu\text{g}/\text{m}^3$ target (air control) group of the same fuel and time point. # $P < 0.05$ vs. the 50 $\mu\text{g}/\text{m}^3$ target group of the same fuel and time point.

Fuel Type	PM Target (µg/m3)	Non-allergic				HDM-Allergic			
		Base	6.25 MCh	12.5 MCh	25 MCh	Base	6.25 MCh	12.5 MCh	25 MCh
		R (cm H ₂ O/ml/s)							
B0	0	0.86 ± 0.13	1.10 ± 0.15	1.29 ± 0.20	2.50 ± 0.70	0.99 ± 0.13	1.98 ± 0.57	3.18 ± 0.58	8.86 ± 3.39
	50	0.83 ± 0.06	1.17 ± 0.09	1.25 ± 0.09	2.37 ± 0.45	0.90 ± 0.02	3.52 ± 1.91	5.52 ± 1.82	12.28 ± 2.51
	150	0.84 ± 0.04	1.26 ± 0.08	1.38 ± 0.16	3.84 ± 1.19	0.95 ± 0.08	2.31 ± 0.65	4.25 ± 1.09	10.58 ± 2.23
	500	0.83 ± 0.06	1.27 ± 0.13	2.56 ± 0.97	3.79 ± 0.81	0.75 ± 0.03	1.28 ± 0.16	2.86 ± 0.71	11.47 ± 3.46
B20	0	1.49 ± 0.16	1.73 ± 0.09	2.08 ± 0.24	2.67 ± 0.25	1.36 ± 0.12	2.30 ± 0.45	5.37 ± 2.91	4.73 ± 1.41
	50	1.65 ± 0.52	2.20 ± 0.52	2.41 ± 0.47	3.84 ± 1.22	1.62 ± 0.28	2.94 ± 0.63	3.88 ± 0.74	5.49 ± 0.07
	150	1.13 ± 0.07	1.42 ± 0.10	1.53 ± 0.18	2.22 ± 0.16	1.18 ± 0.13	1.86 ± 0.19	2.51 ± 0.26	3.55 ± 0.60
	500	1.23 ± 0.14	1.71 ± 0.12	1.74 ± 0.16	2.73 ± 0.24	1.28 ± 0.09	1.82 ± 0.15	2.57 ± 0.43	5.10 ± 0.65
B100	0	0.87 ± 0.14	1.22 ± 0.18	1.28 ± 0.18	2.30 ± 0.43	0.83 ± 0.06	1.36 ± 0.12	2.43 ± 0.58	5.57 ± 1.30
	50	0.80 ± 0.07	1.17 ± 0.12	1.16 ± 0.10	2.19 ± 0.39	0.87 ± 0.06	1.56 ± 0.19	5.56 ± 2.20	8.37 ± 2.01
	150	0.72 ± 0.03	1.02 ± 0.07	1.06 ± 0.09	2.06 ± 0.52	0.81 ± 0.06	1.04 ± 0.05*	1.42 ± 0.08*	2.30 ± 0.23*
	500	0.72 ± 0.06	0.98 ± 0.09	1.10 ± 0.11	1.59 ± 0.24	0.97 ± 0.14	1.29 ± 0.08	1.61 ± 0.09	2.33 ± 0.19*
		E (cm H ₂ O/ml)							
B0	0	24.83 ± 0.90	28.66 ± 0.98	31.92 ± 1.97	51.72 ± 12.60	25.46 ± 0.97	38.51 ± 2.44	79.42 ± 6.81	194.79 ± 36.48
	50	26.31 ± 1.09	30.67 ± 1.30	30.73 ± 1.35	48.48 ± 10.34	27.38 ± 1.06	97.45 ± 52.81	159.96 ± 58.56	340.41 ± 55.05
	150	25.13 ± 0.73	31.16 ± 0.97	35.48 ± 4.62	101.55 ± 39.72	26.07 ± 0.89	56.29 ± 15.78	112.88 ± 36.57	274.67 ± 53.85
	500	25.77 ± 1.50	31.87 ± 2.34	74.49 ± 35.20	91.07 ± 28.74	24.40 ± 1.14	39.48 ± 6.44	93.36 ± 28.24	270.03 ± 71.15
B20	0	30.32 ± 1.61	33.76 ± 1.32	36.88 ± 2.22	47.13 ± 4.64	29.77 ± 1.78	48.45 ± 12.31	112.85 ± 68.91	153.50 ± 67.29
	50	32.14 ± 5.84	49.58 ± 14.52	55.75 ± 17.97	75.92 ± 19.82	29.90 ± 1.24	43.82 ± 4.67	73.00 ± 14.29	146.92 ± 38.80
	150	29.41 ± 0.30	33.73 ± 0.14	34.74 ± 0.50	41.87 ± 1.38	27.66 ± 1.76	43.82 ± 5.34	66.50 ± 5.25	110.17 ± 18.10
	500	28.64 ± 1.74	39.90 ± 4.87	44.72 ± 6.41	58.58 ± 4.51	28.30 ± 2.85	37.00 ± 3.56	64.08 ± 15.35	129.18 ± 35.18
B100	0	22.64 ± 1.28	26.24 ± 1.06	28.09 ± 1.59	47.35 ± 7.19	20.46 ± 0.33	29.69 ± 2.41	65.71 ± 19.34	176.38 ± 47.45
	50	22.57 ± 1.07	27.36 ± 1.63	28.68 ± 1.55	46.78 ± 7.39	22.37 ± 1.25	41.04 ± 5.62	139.00 ± 57.26	272.78 ± 69.57
	150	20.78 ± 0.34	24.63 ± 0.71	26.65 ± 0.89	42.70 ± 8.03	21.64 ± 0.57	26.24 ± 1.40*	31.79 ± 2.48	58.78 ± 9.54*
	500	21.50 ± 0.74	24.91 ± 0.85	26.09 ± 1.10	32.20 ± 2.25	20.99 ± 0.29	29.00 ± 1.59*	36.79 ± 3.91	59.70 ± 7.99*

Supplemental Table 3A. Total lung parameters resistance (R) and elastance (E) in non-allergic and HDM-allergic mice exposed for 4 weeks to B0, B20, or B100 combustion emissions. Data show means and SEM of baseline values and values after aerosolization of MCh (mg/ml; *n* = 4-6 each concentration). *Significantly different (*P* < 0.05) from 50 µg/m³ B100 target group.

Fuel Type	PM Target (μg/m3)	Non-allergic				HDM-Allergic			
		Base	6.25 MCh	12.5 MCh	25 MCh	Base	6.25 MCh	12.5 MCh	25 MCh
		G (cm H ₂ O/ml)							
B0	0	4.24 ± 0.26	5.23 ± 0.39	5.91 ± 0.77	9.90 ± 2.49	3.63 ± 0.26	7.11 ± 0.74	13.51 ± 2.06	27.74 ± 6.33
	50	3.98 ± 0.19	5.47 ± 0.21	5.02 ± 0.23	9.33 ± 1.43	3.70 ± 0.21	18.17 ± 10.78	25.63 ± 8.94	68.00 ± 17.20
	150	4.05 ± 0.23	5.91 ± 0.34	5.88 ± 0.67	16.61 ± 5.74	3.84 ± 0.10	10.58 ± 3.16	22.40 ± 7.19	40.58 ± 7.96
	500	3.87 ± 0.16	5.81 ± 0.45	12.43 ± 5.42	16.29 ± 4.03	3.46 ± 0.14	6.46 ± 1.01	13.52 ± 3.68	55.14 ± 19.22
B20	0	5.21 ± 0.59	5.92 ± 0.34	6.36 ± 0.55	9.70 ± 0.98	4.35 ± 0.60	7.98 ± 1.60	21.21 ± 13.98	21.99 ± 7.28
	50	6.07 ± 2.12	8.85 ± 1.69	8.36 ± 2.06	13.66 ± 3.73	4.88 ± 0.27	7.71 ± 1.08	11.29 ± 1.87	21.97 ± 5.09
	150	4.95 ± 0.05	6.19 ± 0.15	6.34 ± 0.16	9.03 ± 0.34	4.32 ± 0.42	7.83 ± 1.03	11.34 ± 0.42	19.09 ± 3.26
	500	4.77 ± 0.37	7.09 ± 0.42	7.46 ± 0.78	10.87 ± 0.20	4.69 ± 0.62	7.03 ± 0.86	10.06 ± 2.03	22.09 ± 3.46
B100	0	3.29 ± 0.13	4.76 ± 0.21	5.09 ± 0.28	9.96 ± 1.52	2.99 ± 0.13	5.48 ± 0.47*	11.50 ± 2.86	28.60 ± 6.44
	50	3.44 ± 0.12	5.06 ± 0.50	4.86 ± 0.30	9.93 ± 1.47	3.77 ± 0.79	8.11 ± 1.29	26.46 ± 10.53	35.03 ± 6.87
	150	3.07 ± 0.16	4.46 ± 0.37	4.48 ± 0.32	9.03 ± 2.11	3.33 ± 0.12	4.43 ± 0.24*	5.90 ± 0.51*	10.90 ± 1.80*
	500	3.20 ± 0.09	4.24 ± 0.11	4.63 ± 0.24	6.52 ± 0.55	3.23 ± 0.34	4.85 ± 0.36*	7.11 ± 0.78	11.32 ± 1.66*
		H (cm H ₂ O/ml)							
B0	0	22.52 ± 1.26	23.91 ± 1.39	27.71 ± 1.32	36.61 ± 6.68	24.67 ± 0.99	35.85 ± 2.95	57.61 ± 5.88	95.95 ± 19.50
	50	24.69 ± 1.01	25.90 ± 1.04	26.16 ± 1.32	34.21 ± 6.21	25.63 ± 1.44	62.96 ± 25.34	97.14 ± 35.36	223.99 ± 50.24
	150	23.55 ± 0.86	25.84 ± 0.74	30.46 ± 3.99	67.42 ± 25.39	24.61 ± 0.50	39.13 ± 7.08	78.60 ± 23.08	178.19 ± 40.18
	500	24.01 ± 1.36	27.00 ± 1.90	55.18 ± 22.87	62.83 ± 16.99	22.96 ± 1.22	31.58 ± 3.38	58.12 ± 14.09	173.88 ± 54.84
B20	0	27.38 ± 0.93	28.55 ± 1.26	31.06 ± 1.44	36.98 ± 3.67	27.98 ± 1.50	41.44 ± 8.41	71.06 ± 32.16	104.55 ± 44.19
	50	26.25 ± 1.56	37.95 ± 9.17	43.36 ± 11.39	51.82 ± 11.76	26.39 ± 1.24	32.97 ± 3.59	48.69 ± 9.64	86.44 ± 21.41
	150	27.42 ± 0.47	28.44 ± 0.66	29.20 ± 0.95	29.47 ± 1.42	24.48 ± 1.94	31.27 ± 2.90	45.12 ± 2.77	68.81 ± 8.23
	500	24.73 ± 2.39	32.47 ± 3.91	37.39 ± 5.25	45.61 ± 4.26	26.61 ± 1.92	32.65 ± 3.03	47.97 ± 7.13	76.81 ± 13.26
B100	0	19.30 ± 0.89	19.64 ± 0.60	24.10 ± 0.96	30.50 ± 4.29	19.93 ± 0.51	24.12 ± 1.57*	42.26 ± 8.66	98.99 ± 26.41
	50	21.77 ± 0.80	21.89 ± 1.13	23.48 ± 2.02	31.97 ± 4.10	23.06 ± 2.14	34.19 ± 2.49	72.52 ± 23.72	166.11 ± 52.94
	150	19.10 ± 1.14	21.59 ± 0.44	23.42 ± 1.70	31.17 ± 4.99	20.85 ± 1.10	21.98 ± 1.90*	26.56 ± 1.70*	42.44 ± 6.25*
	500	19.45 ± 1.02	22.08 ± 1.03	23.56 ± 1.19	26.06 ± 2.32	19.83 ± 0.97	24.20 ± 1.21*	28.93 ± 1.90	42.74 ± 4.43*

Supplemental Table 3B. Peripheral lung tissue parameters resistance (G) and elastance (H) in non-allergic and HDM-allergic mice exposed for 4 weeks to B0, B20, or B100 combustion emissions. Data show means and SEM of baseline values and values after aerosolization of MCh (mg/ml; *n* = 4-6 each concentration). *Significantly different (*P* < 0.05) from 50 µg/m³ B100 target group.

Fuel Type	PM Target (µg/m3)	Non-allergic				HDM-Allergic			
		Base	6.25 MCh	12.5 MCh	25 MCh	Base	6.25 MCh	12.5 MCh	25 MCh
		R _n (cm H ₂ O/ml/s)							
B0	0	0.52 ± 0.10	0.65 ± 0.11	0.82 ± 0.17	1.31 ± 0.27	0.72 ± 0.13	1.60 ± 0.75	1.76 ± 0.58	2.24 ± 0.50
	50	0.54 ± 0.07	0.73 ± 0.09	0.83 ± 0.11	1.43 ± 0.27	0.61 ± 0.01	1.32 ± 0.35	1.61 ± 0.32	2.40 ± 0.25
	150	0.55 ± 0.05	0.76 ± 0.07	0.91 ± 0.11	1.82 ± 0.44	0.69 ± 0.09	1.16 ± 0.20	1.67 ± 0.30	3.13 ± 0.45
	500	0.55 ± 0.05	0.79 ± 0.10	1.22 ± 0.23	1.96 ± 0.28	0.50 ± 0.02	0.70 ± 0.04	1.13 ± 0.15	2.15 ± 0.26
B20	0	1.07 ± 0.09	1.26 ± 0.12	1.55 ± 0.21	1.78 ± 0.18	1.05 ± 0.15	1.63 ± 0.39	2.18 ± 0.69	2.11 ± 0.44
	50	1.10 ± 0.24	1.42 ± 0.28	1.67 ± 0.26	2.25 ± 0.51	1.20 ± 0.23	1.84 ± 0.41	2.34 ± 0.56	2.47 ± 0.36
	150	0.76 ± 0.07	0.91 ± 0.09	1.00 ± 0.15	1.29 ± 0.16	0.83 ± 0.12	1.10 ± 0.13	1.32 ± 0.18	1.38 ± 0.18
	500	0.83 ± 0.11	1.06 ± 0.11	1.17 ± 0.15	1.76 ± 0.30	0.93 ± 0.06	1.27 ± 0.11	1.59 ± 0.19	2.39 ± 0.30
B100	0	0.68 ± 0.14	0.78 ± 0.16	0.82 ± 0.16	1.25 ± 0.30	0.58 ± 0.07	0.83 ± 0.07	1.11 ± 0.23	1.55 ± 0.29
	50	0.58 ± 0.06	0.74 ± 0.10	0.75 ± 0.09	1.08 ± 0.13	0.72 ± 0.05	0.93 ± 0.07	1.51 ± 0.29	2.02 ± 0.56
	150	0.47 ± 0.04	0.61 ± 0.07	0.68 ± 0.08	1.02 ± 0.22	0.56 ± 0.06	0.61 ± 0.05*	0.88 ± 0.05	1.04 ± 0.05
	500	0.49 ± 0.07	0.62 ± 0.08	0.78 ± 0.10	0.97 ± 0.20	0.75 ± 0.14	0.89 ± 0.10	0.99 ± 0.09	1.07 ± 0.08
		I (cm H ₂ O/ml/s ²)							
B0	0	-0.0002 ± 0.0001	-0.0004 ± 0.0002	-0.0004 ± 0.0003	-0.0004 ± 0.0012	-0.0002 ± 0.0002	-0.0026 ± 0.0022	0.0004 ± 0.0008	0.0019 ± 0.0027
	50	-0.0004 ± 0.0001	-0.0007 ± 0.0003	-0.0008 ± 0.0002	-0.0016 ± 0.0008	-0.0005 ± 0.0001	0.0039 ± 0.0049	0.0022 ± 0.0023	0.0170 ± 0.0049
	150	-0.0003 ± 0.0001	-0.0008 ± 0.0002	-0.0007 ± 0.0002	-0.0005 ± 0.0014	-0.0007 ± 0.0001	-0.0020 ± 0.0005	-0.0009 ± 0.0005	0.0034 ± 0.0025
	500	-0.0005 ± 0.0001	-0.0010 ± 0.0004	0.0003 ± 0.0015	-0.0020 ± 0.0013	-0.0005 ± 0.0001	-0.0004 ± 0.0002	-0.0003 ± 0.0007	0.0105 ± 0.0079
B20	0	-0.0010 ± 0.0004	-0.0013 ± 0.0002	-0.0017 ± 0.0005	-0.0031 ± 0.0006	-0.0008 ± 0.0003	-0.0013 ± 0.0007	0.0010 ± 0.0012	-0.0034 ± 0.0027
	50	-0.0005 ± 0.0003	-0.0015 ± 0.0011	-0.0024 ± 0.0009	-0.0043 ± 0.0021	-0.0002 ± 0.0006	-0.0013 ± 0.0008	-0.0017 ± 0.0016	0.0011 ± 0.0036
	150	-0.0002 ± 0.0001	-0.0005 ± 0.0001	-0.0005 ± 0.0003	-0.0012 ± 0.0003	-0.0002 ± 0.0003	-0.0009 ± 0.0005	-0.0016 ± 0.0002	-0.0020 ± 0.0002
	500	0.0002 ± 0.0003	-0.0008 ± 0.0001	-0.0004 ± 0.0002	-0.0021 ± 0.0005	0.0000 ± 0.0003	-0.0005 ± 0.0005	-0.0012 ± 0.0008	-0.0014 ± 0.0003
B100	0	0.0001 ± 0.0003	-0.0002 ± 0.0001	0.0003 ± 0.0001	-0.0002 ± 0.0005	0.0006 ± 0.0002	0.0005 ± 0.0003	0.0016 ± 0.0006	0.0044 ± 0.0021
	50	0.0001 ± 0.0001	0.0000 ± 0.0001	0.0001 ± 0.0002	0.0002 ± 0.0002	0.0004 ± 0.0001	0.0005 ± 0.0001	0.0035 ± 0.0027	0.0066 ± 0.0025
	150	0.0003 ± 0.0001	0.0002 ± 0.0001	0.0003 ± 0.0001	0.0001 ± 0.0002	0.0000 ± 0.0002	0.0001 ± 0.0001	-0.0001 ± 0.0001	0.0002 ± 0.0005*
	500	0.0003 ± 0.0001	0.0002 ± 0.0001	0.0001 ± 0.0003	0.0003 ± 0.0003	0.0001 ± 0.0002	0.0001 ± 0.0001	0.0007 ± 0.0001	0.0008 ± 0.0002

Supplemental Table 3C. Central airways parameters Newtonian resistance (R_n) and inertance (I) in non-allergic and HDM-allergic mice exposed for 4 weeks to B0, B20, or B100 combustion emissions. Data show means and SEM of baseline values and values after aerosolization of MCh (mg/ml; *n* = 4-6 each concentration). *Significantly different (*P* < 0.05) from 50 µg/m³ B100 target group.

Parameter	PM Target ($\mu\text{g}/\text{m}^3$)	B0		B20		B100	
		- HDM	+ HDM	- HDM	+ HDM	- HDM	+ HDM
Lymphocytes ($\times 10^4$)	0	0.14 $\pm$ 0.03	0.63 $\pm$ 0.11	0.14 $\pm$ 0.05	1.05 $\pm$ 0.28	0.12 $\pm$ 0.04	1.25 $\pm$ 0.49
	50	0.07 $\pm$ 0.03	0.20 $\pm$ 0.09	0.22 $\pm$ 0.07	1.08 $\pm$ 0.27	0.07 $\pm$ 0.04	1.47 $\pm$ 0.51
	150	0.05 $\pm$ 0.03	0.45 $\pm$ 0.17	0.24 $\pm$ 0.17	0.41 $\pm$ 0.09	0.14 $\pm$ 0.05	0.83 $\pm$ 0.31
	500	0.03 $\pm$ 0.02	0.31 $\pm$ 0.13	0.04 $\pm$ 0.02	0.62 $\pm$ 0.20	0.09 $\pm$ 0.03	0.77 $\pm$ 0.20
IL-13 (pg/ml)	0	28.4 $\pm$ 12	3.2 $\pm$ 0.0	19.4 $\pm$ 9.7	12 $\pm$ 8.2	25.6 $\pm$ 6.3	9.9 $\pm$ 2.3
	50	8.0 $\pm$ 2.2	4.7 $\pm$ 1.5	3.2 $\pm$ 0.0	3.2 $\pm$ 0.0	20.9 $\pm$ 5.2	12.4 $\pm$ 2.4
	150	10.5 $\pm$ 5.4	3.2 $\pm$ 0.0	29.1 $\pm$ 16.5	3.2 $\pm$ 0.0	25.9 $\pm$ 6.6	10.2 $\pm$ 2.9
	500	6.0 $\pm$ 1.7	3.2 $\pm$ 0.0	15.3 $\pm$ 5.9	3.2 $\pm$ 0.0	35.9 $\pm$ 9.2†	10.8 $\pm$ 1.6
Albumin ($\mu\text{g}/\text{ml}$)	0	12.0 $\pm$ 0.4	12.9 $\pm$ 0.9	13.9 $\pm$ 1.1	14.8 $\pm$ 1.1	12.1 $\pm$ 1.0	15.5 $\pm$ 2.2
	50	21.3 $\pm$ 4.1*#	13.8 $\pm$ 0.7	14.2 $\pm$ 1.8	15.0 $\pm$ 1.1	12.2 $\pm$ 1.4	16.2 $\pm$ 2.1
	150	14.5 $\pm$ 2.0	14.0 $\pm$ 1.4	14.2 $\pm$ 0.6	11.6 $\pm$ 1.2	12.3 $\pm$ 1.4	12.8 $\pm$ 1.7
	500	11.8 $\pm$ 0.9	12.7 $\pm$ 0.7	12.9 $\pm$ 1.0	13.0 $\pm$ 0.6	10.5 $\pm$ 1.5	12.9 $\pm$ 1.4
NAG (U/L)	0	8.09 $\pm$ 0.47	8.24 $\pm$ 0.68	5.30 $\pm$ 0.51	4.83 $\pm$ 0.14	6.58 $\pm$ 0.31	7.64 $\pm$ 0.47
	50	6.86 $\pm$ 0.34	7.17 $\pm$ 0.75	5.05 $\pm$ 0.35	4.89 $\pm$ 0.20	7.05 $\pm$ 0.32	7.54 $\pm$ 0.30
	150	5.40 $\pm$ 0.41*	6.61 $\pm$ 0.24	4.47 $\pm$ 0.10	5.66 $\pm$ 0.28	6.00 $\pm$ 0.24	7.68 $\pm$ 0.52
	500	6.37 $\pm$ 0.34*	6.59 $\pm$ 0.18	4.63 $\pm$ 0.21	5.12 $\pm$ 0.33	6.46 $\pm$ 0.23	6.83 $\pm$ 0.43
Total IgE (ng/ml)	0	296.8 $\pm$ 50.7	342.4 $\pm$ 49.2	269.5 $\pm$ 29.8	258.8 $\pm$ 40.9	303.4 $\pm$ 70.6	325.9 $\pm$ 49.7
	50	311.7 $\pm$ 54.8	366.4 $\pm$ 52.8	200.8 $\pm$ 15.5	231.8 $\pm$ 26.2	238.2 $\pm$ 26.8	384.5 $\pm$ 40.3
	150	518.8 $\pm$ 56.9	334.0 $\pm$ 43.0	200.5 $\pm$ 39.1	193.1 $\pm$ 19.6	264.1 $\pm$ 36.8	321.8 $\pm$ 38.8
	500	398.6 $\pm$ 65.0	516.4 $\pm$ 77.4	182.4 $\pm$ 27.6	191.9 $\pm$ 19.7	228.7 $\pm$ 29.7	248.1 $\pm$ 36.6

Supplemental Table 4. BAL cell numbers, cytokine concentrations, biochemical parameters, and serum Total IgE from non-allergic (- HDM) and HDM-allergic (+ HDM) Balb/cJ mice exposed to B0, B20, and B100 fuel emissions for 4 weeks and necropsied after 2 hours recovery. Results show means and SEM of 7-8 mice/group (B0, B20) or 12-17 mice/group (B100). Two-way ANOVA results show significant effects of HDM allergy factor (shaded cells). Significant PM concentration factor effects were further analyzed by one-way ANOVA, and shown in bold font: * $P < 0.05$ vs. the control 0 $\mu\text{g}/\text{m}^3$ target group of the same fuel. # $P < 0.05$ vs. the 500 $\mu\text{g}/\text{m}^3$ target group of the same fuel.

Study Component	Exposure Length / Recovery Time	Air (0 µg/m ³) Target			500 µg/m ³ Target			Air (0 µg/m ³) Target			500 µg/m ³ Target		
		B0	B20	B100	B0	B20	B100	B0	B20	B100	B0	B20	B100
Toxicology		Alveolar or Bronchiolar Macrophages: Intracytoplasmic Pigment						Intraluminal Alveolar or Bronchiolar Mucus					
	1 day / 2 hours	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	1/4	0/4	0/4
	1 day / 24 hours	0/4	0/4	0/4	1/4	1/4	1/4	0/4	0/4	0/4	0/4	0/4	0/4
	5 days / 2 hours	0/4	0/4	0/4	4/4*	4/4*	4/4*	0/4	0/4	0/4	0/4	0/4	0/4
	5 days / 24 hours	0/4	0/4	0/4	4/4*	4/4*	4/4*	0/4	1/4	0/4	0/4	0/4	0/4
	4 weeks / 2 hours	0/4	0/4	0/1	4/4*	4/4*	4/4*	1/4	0/4	0/1	0/4	0/4	0/4
	4 weeks / 24 hours	0/0	0/4	0/4	4/4	4/4*	4/4*	0/0	0/4	0/4	0/4	0/4	0/4
Non-Allergic	4 weeks / 2 hours	0/3	0/4	0/3	4/4*	4/4*	4/4*	1/4	0/4	1/3	3/4	0/4	0/4
HDM-Allergic	4 weeks / 2 hours	0/4	0/4	0/4	4/4*	4/4*	4/4*	2/4	4/4 [#]	4/4	4/4	4/4 [#]	4/4 [#]
Toxicology		Alveolar, Bronchiolar, or Interstitial Inflammation [§]						Bronchiolar Mucous Cell Hyperplasia/Metaplasia					
	1 day / 2 hours	0/4	1/4 (1.0)	0/4	2/4 (1.0)	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4
	1 day / 24 hours	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4
	5 days / 2 hours	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4
	5 days / 24 hours	0/4	1/4 (2.0)	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4
	4 weeks / 2 hours	0/4	0/4	0/1	0/4	0/4	0/4	0/4	0/4	0/1	0/4	0/4	0/4
	4 weeks / 24 hours	0/0	0/4	0/4	0/4	0/4	0/4	0/0	0/4	0/4	0/4	0/4	0/4
Non-Allergic	4 weeks / 2 hours	3/4 (1.3)	4/4 (1.0)	2/3 (1.0)	3/4 (1.3)	4/4 (1.8)	2/4 (1.0)	0/4	0/4	0/3	0/4	0/4	0/4
HDM-Allergic	4 weeks / 2 hours	4/4 (2.0)	4/4 (2.3)	4/4 (2.3)	4/4 (2.3)	4/4 (1.8)	4/4 (2.0)	2/4	4/4 [#]	4/4 [#]	4/4 [#]	4/4 [#]	4/4 [#]

Supplemental Table 5. Histopathological changes in left lung sections of Balb/cJ mice exposed to B0, B20, and B100 fuel emissions for 1 day, 5 days, or 4 weeks, and necropsied after 2 or 24 hours recovery (Toxicology component), and control non-allergic or HDM-allergic mice exposed to fuel emissions for 4 weeks and necropsied after 2 hours recovery (Allergy component). Data indicate number of mice with a particular finding / number examined; numbers in parentheses represent average severity score for all mice in the group with the given change, using a qualitative 0-4 scale (0=absent, 1=minimal, 2=mild, 3=moderate, 4=severe). * $P < 0.05$ for incidence vs. the 0 µg/m³ target (air control) group of the same fuel and time point; # $P < 0.05$ for incidence for non-allergic vs. HDM-allergic groups for the same fuel. [§]Pulmonary inflammation included chronic active mixed cell infiltrates (eosinophils, neutrophils, lymphocytes, plasma cells, and/or macrophages) in alveolar and bronchiolar air spaces and/or peribronchiolar and perivascular areas.

Study Component	Exposure Length / Recovery Time	Air (0 µg/m ³) Target			500 µg/m ³ Target			Air (0 µg/m ³) Target			500 µg/m ³ Target		
		B0	B20	B100	B0	B20	B100	B0	B20	B100	B0	B20	B100
Toxicology		Nasal Cavity: Acute Inflammation [§]						Nasal Epithelium: Vacuolization, Degeneration, or Necrosis					
	1 day / 2 hours	1/4 (1.0)	1/4 (1.0)	1/4 (1.0)	2/4 (1.0)	2/4 (1.3)	2/5 (1.0)	0/4	0/4	0/4	0/4	0/4	0/5
	1 day / 24 hours	0/4	0/4	1/4 (1.0)	0/4	0/4	0/4	0/4	0/4	1/4	0/4	0/4	1/4
	5 days / 2 hours	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	1/4	1/4	0/4
	5 days / 24 hours	0/4	1/4 (1.0)	0/4	0/4	1/4 (1.0)	0/4	0/4	1/4	2/4	0/4	0/4	0/4
	4 weeks / 2 hours	0/4	2/4 (1.0)	0/4	0/4	1/4 (1.0)	0/4	1/4	0/4	1/4	0/4	2/4	0/4
	4 weeks / 24 hours	0/4	1/4 (1.0)	1/4 (1.0)	0/4	0/4	1/4 (1.0)	1/4	1/4	1/4	0/4	0/4	0/4
Non-Allergic	4 weeks / 2 hours	0/4	2/4 (1.0)	0/4	2/4 (1.0)	0/4	0/4	1/4	1/4	1/4	0/4	1/4	1/4
HDM-Allergic	4 weeks / 2 hours	1/4 (1.0)	0/4	1/4 (1.0)	2/4 (1.5)	0/4	2/4 (1.0)	0/4	2/4	0/4	0/4	1/4	0/4
Toxicology		Nasal Cavity: Mucous Cell Hyperplasia/Metaplasia						Nasal Glands: Focal Ectasia					
	1 day / 2 hours	0/4	0/4	0/4	0/4	0/4	0/5	0/4	0/4	0/4	0/4	0/4	0/5
	1 day / 24 hours	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4
	5 days / 2 hours	0/4	0/4	0/4	0/4	1/4	0/4	0/4	0/4	0/4	1/4	0/4	0/4
	5 days / 24 hours	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	1/4	0/4
	4 weeks / 2 hours	0/4	0/4	0/4	0/4	1/4	0/4	1/4	0/4	0/4	0/4	0/4	0/4
	4 weeks / 24 hours	2/4	0/4	0/4	0/4	0/4	0/4	0/4	1/4	0/4	1/4	0/4	0/4
Non-Allergic	4 weeks / 2 hours	0/4	0/4	0/4	0/4	0/4	0/4	1/4	1/4	0/4	0/4	0/4	1/4
HDM-Allergic	4 weeks / 2 hours	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	1/4	0/4	0/4

Supplemental Table 6. Histopathological changes in the nasal cavity of mice exposed to B0, B20, and B100 fuel emissions. Groups, exposure parameters, and data format are the same as those described in Supplemental Table 5. Data indicate number of mice with a particular finding / number examined; numbers in parentheses represent average severity score for all mice in the group with the given change, using a qualitative 0-4 scale (0=absent, 1=minimal, 2=mild, 3=moderate, 4=severe). No significant group differences in incidence were observed. [§]Acute inflammation consisted of neutrophilic infiltrates in the nasal air spaces and/or submucosa.