Online Supplement
Airway and Systemic Prostaglandin E2 Association with COPD Symptoms and Macrophage Phenotype

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Figure E1: Flow cytometry gating strategy to isolate airway macrophages. Single cells were identified followed by live-dead discrimination. Live cells that were CD45+ were included to identify leukocyotes, followed by HLA-DR+ cells with a characteristic side-scatter to identify airway macrophages. Lastly, we excluded CD14+ cells to eliminate any large monocytes.

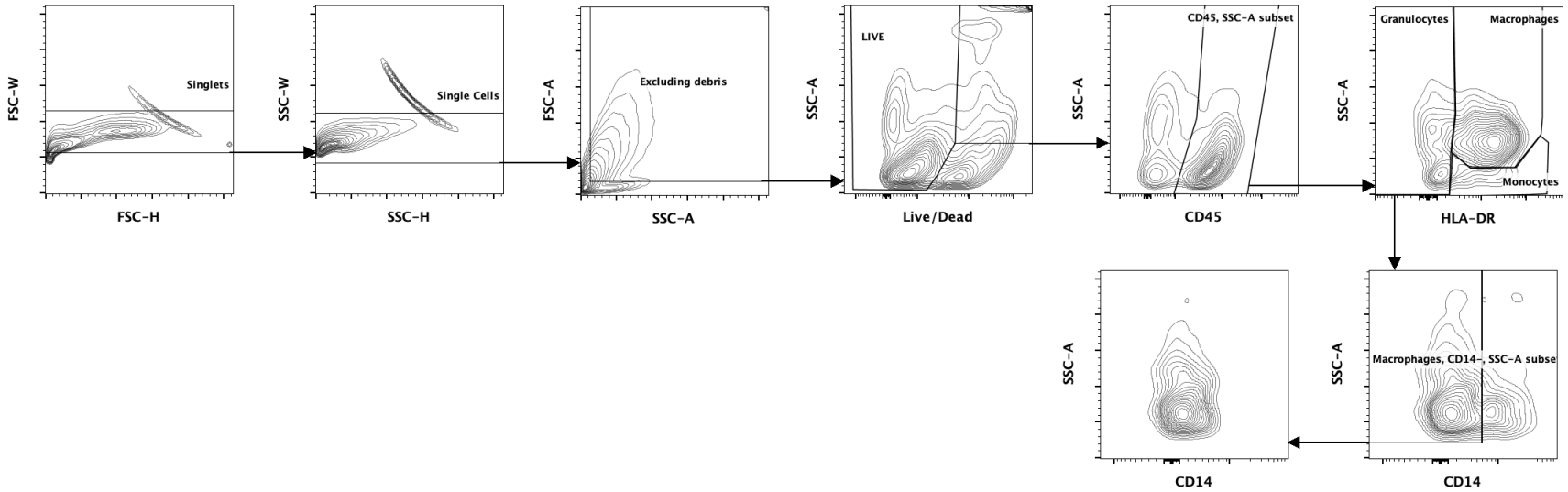

Table E1: Odds ratio (95% CI) or β (95% CI) of regression models evaluating the association between PGE-M intensity or absolute concentration (adjusted for urine creatinine) with respiratory outcomes.

	Urine PGE-M Normalized Intensity	Urine PGE-M Concentration (µg/mgCr) > limit of detection
Primary Outcomes		
Any Exacerbation over 6 months, OR	0.95 (0.29, 3.0)	2.08 (0.19, 35.11)
Moderate or Severe Exacerbation over 6 months, OR	1.32 (0.32, 7.09)	0.94 (0.04, 19.06)
Secondary Outcomes		
Any Exacerbation in previous year, OR (self-reported at baseline)	1.04 (0.46, 2.38)	6.23 (0.77, 90.74)
COPD Assessment Test (CAT) Score	-0.94 (-3.34, 1.46)	1.29 (-4.76, 7.35)
Modified Medical Research Council (mMRC) Score	-0.17 (-0.55, 0.22)	-0.20 (-1.16, 0.77)
St. George's Respiratory Questionnaire	-2.02 (-8.10, 4.07)	3.14 (-12.15, 18.44)
Ease of Cough and Sputum Clearance (ECSC) Score	-0.12 (-1.13, 0.89)	0.54 (-1.98, 3.05)
Breathlessness, Cough, and Sputum Scale (BCSS)	0.14 (-0.59, 0.88)	0.69 (-1.05, 2.43)
Clinical COPD Questionnaire (CCQ) Score	-0.16 (-0.50, 0.17)	0.36 (-0.48, 1.19)
Chronic bronchitis, OR	1.47 (0.58, 4.82)	14.49 (0.77, 1095.51)

Adjusted logistic regression models were used to calculate odds ratio and adjusted linear regression models were used to calculate mean difference (β). Both models were adjusted for age, FEV1pp, race, sex, comorbidity count, and self-reported use of aspirin

Table E2: Geometric mean fluorescent intensity (MFI) and percentage positive of sputum macrophages surface markers and intracellular cytokines

	MFI	Percentage positive
M1 Macrophage Phenotype		
CD64, mean (SD)	10,534.8 (4,572.5)	54.3% (17.3)
CD80, mean (SD)	4,856.2 (2,986.2)	79.1% (18.1)
IL-1b, mean (SD)	4,206.4 (2,545.6)	7.8% (12.9)
M2 Macrophage Phenotype		
CD163, mean (SD)	6,296.2 (3,047.1)	86.0% (12.6)
CD206, mean (SD)	1,070.6 (2,137.4)	59.5% (21.0)
TGFb1, mean (SD)	5,118.6 (3,038.6)	86.1% (11.7)