

Supplement Table 1: Metadata and references for curated GEO deposited datasets of primary human airway epithelial cells.

GSE Accession	Affymetrix Chip	Sample Annotations (N=504)	Citation
GSE4302	HG-U133_Plus_2	15 current smokers 11 never smokers 2 unknown	Woodruff et al., 2007; 2009
GSE37147	HuGene-1_0-st-v1	82 former smokers (49 male, 33 female) 69 current smokers (34 male, 35 female) 8 unknown	Steiling et al., 2013
GSE67472	HG-U133_Plus_2	23 male 20 female	Christenson et al., 2015
GSE108134	HG-U133_Plus_2	176 current smokers 98 never smokers	O'Beirne et al., 2018

Christenson SA, Steiling K, van den Berge M, Hijazi K, Hiemstra PS, Postma DS, Lenburg ME, Spira A, Woodruff PG. Asthma-COPD overlap. Clinical relevance of genomic signatures of type 2 inflammation in chronic obstructive pulmonary disease. *American journal of respiratory and critical care medicine* 2015; 191: 758-766.

O'Beirne SL, Shenoy SA, Salit J, Strulovici-Barel Y, Kaner RJ, Visvanathan S, Fine JS, Mezey JG, Crystal RG. Ambient Pollution-related Reprogramming of the Human Small Airway Epithelial Transcriptome. *American journal of respiratory and critical care medicine* 2018; 198: 1413-1422.

Steiling K, van den Berge M, Hijazi K, Florido R, Campbell J, Liu G, Xiao J, Zhang X, Duclos G, Drizik E, Si H, Perdomo C, Dumont C, Coxson HO, Alekseyev YO, Sin D, Pare P, Hogg JC, McWilliams A, Hiemstra PS, Sterk PJ, Timens W, Chang JT, Sebastiani P, O'Connor GT, Bild AH, Postma DS, Lam S, Spira A, Lenburg ME. A dynamic bronchial airway gene expression signature of chronic obstructive pulmonary disease and lung function impairment. *American journal of respiratory and critical care medicine* 2013; 187: 933-942.

Woodruff PG, Boushey HA, Dolganov GM, Barker CS, Yang YH, Donnelly S, Ellwanger A, Sidhu SS, Dao-Pick TP, Pantoja C, Erle DJ, Yamamoto KR, Fahy JV. Genome-wide profiling identifies epithelial cell genes associated with asthma and with treatment response to corticosteroids. *Proceedings of the National Academy of Sciences of the United States of America* 2007; 104: 15858-15863.

Woodruff PG, Modrek B, Choy DF, Jia G, Abbas AR, Ellwanger A, Koth LL, Arron JR, Fahy JV. T-helper type 2-driven inflammation defines major subphenotypes of asthma. *American journal of respiratory and critical care medicine* 2009; 180: 388-395.