

**Table S4.** Chemical retrieved from the Comparative Toxicogenomics Database (CTD, URL: <http://ctdbase.org/>, Davis et al. 2014) and interacting with the two genes (ATP8A1 and ABCA1). In this table are indicated the LMW agents/irritants/cleaning products or disinfectants evaluated by job specific questionnaires (see Table E1) or exposures known to contain compounds with irritant properties (air pollutants and vehicle emissions).

| Chemical Name           | Gene Symbol | Interactions   | Organism            | Reference   |
|-------------------------|-------------|--|---------------------|---|
| Tobacco smoke pollution | ATP8A1      | Tobacco Smoke Pollution results in decreased expression of ATP8A1 mRNA | <i>Homo sapiens</i> | Anthérieu S, et al. Comparison of cellular and transcriptomic effects between electronic cigarette vapor and cigarette smoke in human bronchial epithelial cells. <i>Toxicol In Vitro</i> . 2017 Dec;45(Pt 3):417-425.  |
| Tobacco smoke pollution | ATP8A1      | Tobacco Smoke Pollution results in increased expression of ATP8A1 mRNA | <i>Mus musculus</i> | Szostak J, et al. Aerosol from Tobacco Heating System 2.2 has reduced impact on mouse heart gene expression compared with cigarette smoke. <i>Food Chem Toxicol</i> . 2017 Mar;101:157-167.   |
| Soot                    | ATP8A1      | Soot results in decreased expression of ATP8A1 mRNA                    | <i>Mus musculus</i> | Husain M, et al. Carbon black nanoparticles induce biphasic gene expression changes associated with inflammatory responses in the lungs of C57BL/6 mice following a single intratracheal instillation. <i>Toxicol Appl Pharmacol</i> . 2015 Dec 15;289(3):573-88.         |
| Soot                    | ABCA1       | Soot results in decreased expression of ABCA1 mRNA                     | <i>Mus musculus</i> | Bourdon JA, et al. Hepatic and pulmonary toxicogenomic profiles in mice intratracheally instilled with carbon black nanoparticles reveal pulmonary inflammation, acute phase response, and alterations in lipid homeostasis. <i>Toxicol Sci</i> . 2012 Jun;127(2):474-84. |
| Air Pollutants          | ABCA1       | Air Pollutants analog results in decreased expression of ABCA1 mRNA    | <i>Homo sapiens</i> | Rager JE, et al. A toxicogenomic comparison of primary and photochemically altered air pollutant mixtures. <i>Environ Health Perspect</i> . 2011 Nov;119(11):1583-9.  |