# INCREASED INFLAMMATORY RESPONSE TO LPS IN MONOCYTE–DERIVED MACROPHAGES PREEXPOSED TO NANOPARTICLE AIR POLLUTANTS

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Exposure to inhalable particulate matter causes inflammation in the airways which can lead to cancer. Our study aimed to assess ex-vivo responses of monocyte-derived macrophages to urban dust (UD), and nanoparticulate carbon black (NPCB), focusing on their pro-inflammatory properties. We have used naive and polarized THP1 cells, a human monocyte-macrophage cell line. THP1 cells were grown overnight in serum-free media and then treated with 50 $\mu g \cdot mL^{-1}$UD, or NPCB for 24 hours. The same treatment was applied to the cells polarised to type 0 macrophages with a protein kinase C activator - phorbol 12-myristate 13-acetate (PMA). Subsequently, both cell types were treated for 24 hours with (100 ng/mL) lipopolysaccharide (LPS) applied to the cells and intracellular IL-1$\beta$, IL-6, IL-10 and TNF$\alpha$ were quantified with fluorescent monoclonal antibodies and flow cytometry. All proinflammatory markers were elevated by LPS and NPCB and less notably by UD. The pro-inflammatory response to LPS was increased by both PMs, more notably in macrophages. Our data show that pre-exposure of monocytes and macrophages to low concentrations of PMs may prime the cells to hyperinflammatory response upon contact with LPS.