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Macrophage- but not monocyte-derived extracellular vesicles induce placental pro-inflammatory responses

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1 **Macrophage- but not monocyte-derived extracellular vesicles induce placental pro-inflammatory responses**

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10 **Keywords**

11 Explants; trophoblast; exosomes; extracellular vesicles; immunology; reproductive immunology; macrophages;  
12 cytokines

13  
14 **Abstract**

15 The placenta sheds extracellular vesicles (EVs), including exosomes, into the maternal circulation. We recently  
16 demonstrated that this trafficking of EVs is bi-directional; with uptake of macrophage exosomes by the placenta  
17 inducing cytokine release. The specificity of this response is currently unknown. THP-1 cells were cultured as  
18 monocytes or differentiated to macrophages, and EVs isolated by ultra-centrifugation. The effect of EVs on human  
19 placental explants was measured by cytokine ELISA/luminex. Macrophage, but not monocyte, EVs induce the release  
20 of pro-inflammatory cytokines by the placenta. Thus, placental responses to immune cell EVs, including exosomes,  
21 reflects the phenotype of the source cell.

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