

Group Exercise

Reproducible and FAIR Bioinformatics
Analysis of Omics Data

July 13, 2024

Data Source

Am J Physiol Lung Cell Mol Physiol 320: L530–L544, 2021.
First published January 20, 2021; doi:[10.1152/ajplung.00621.2020](https://doi.org/10.1152/ajplung.00621.2020)



AMERICAN JOURNAL OF PHYSIOLOGY

**LUNG CELLULAR AND
MOLECULAR PHYSIOLOGY®**

RESEARCH ARTICLE

Extracellular Vesicles in Lung Health, Disease, and Therapy

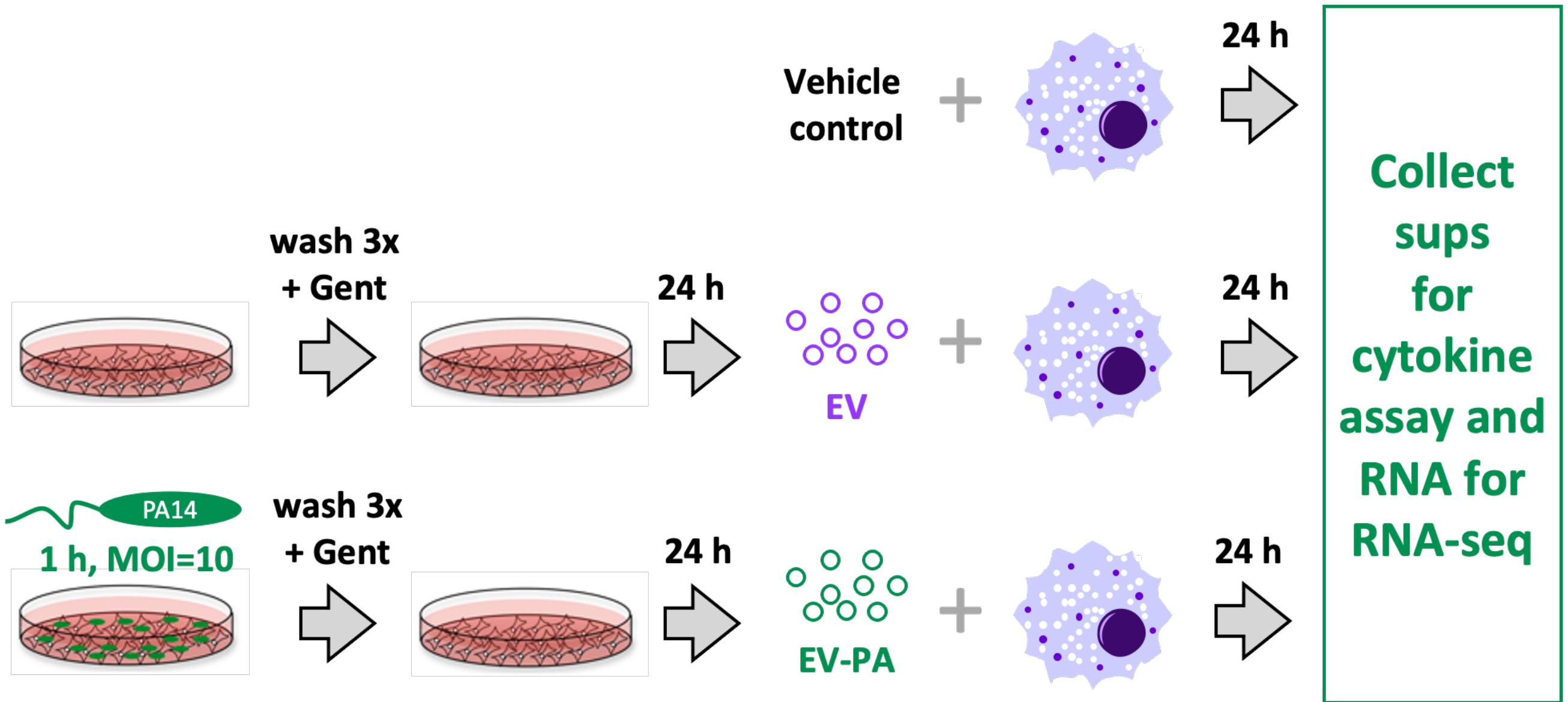
CF monocyte-derived macrophages have an attenuated response to extracellular vesicles secreted by airway epithelial cells

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Experimental Design

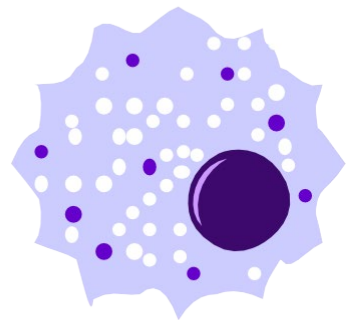


WT or F508del homozygous
primary human bronchial
epithelial cells (HBEC)

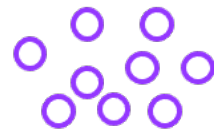
WT or F508del homozygous
primary human monocyte-
derived macrophages (MDM)

Group Subsets

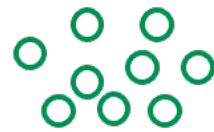
Group 1



CF MDM

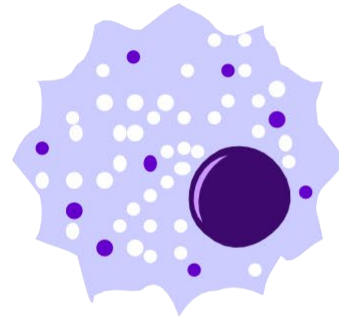


EV

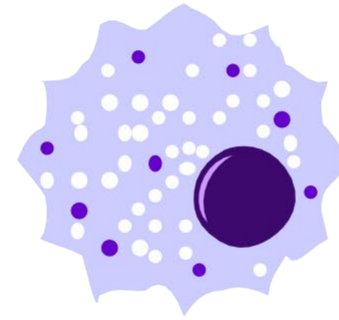


EV-PA

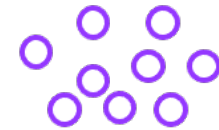
Group 3



CF MDM



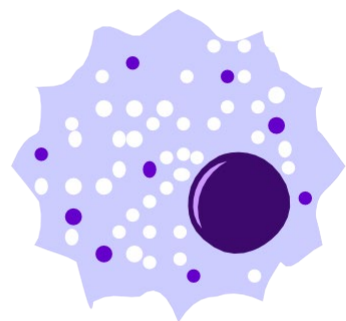
WT MDM



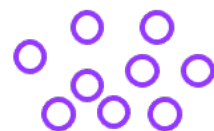
EV

**No EV
control**

Group 2



WT MDM

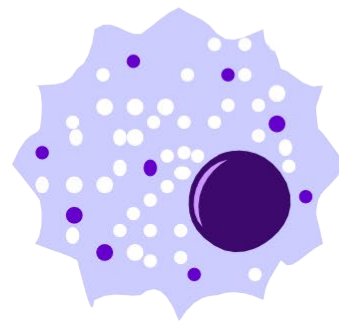


EV

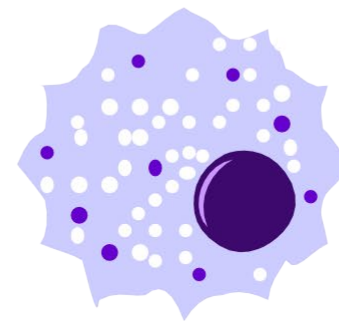


EV-PA

Group 4



CF MDM



WT MDM



EV-PA

**No EV
control**



Instructions

1. You will be randomly assigned to one of the 4 groups.
2. Download the ZIP file for your group and follow the instructions in the included document.
3. You will be performing exploratory analysis, differential gene expression analysis and (if time allows) pathway analysis on your subset of the data.
4. Each group will present a short (10 min) summary of their findings starting at **4 PM**.