

Description of Additional Supplementary Files

Supplementary Data 1. ABC-MK prior distributions.

Supplementary Data 2. Inferred ω_a value and 95% confidence interval for each cell lineage posterior distribution in the Developmental Atlas.

Supplementary Data 3. Inferred ω_a value and 95% confidence interval for each cell lineage posterior distribution in the Adult Atlas..

Supplementary Data 4. Inferred ω_a value and 95% confidence interval for each cell lineage posterior distribution in the Lung Atlas.

Supplementary Data 5. Inferred ω_a value and 95% confidence interval on iPSC lines differentiated into Macrophages and exposed to 10 stimuli that emulate responses to pro/anti-inflammatory cytokines and bacterial or viral infections at two different timepoints.

Supplementary Data 6. Inferred α value and 95% confidence interval for each cell lineage posterior distribution in the Developmental Atlas.

Supplementary Data 7. Inferred α value and 95% confidence interval for each cell lineage posterior distribution in the Adult Atlas.

Supplementary Data 8. Inferred α value and 95% confidence interval for each cell lineage posterior distribution in the Lung Atlas.

Supplementary Data 9. Inferred α value and 95% confidence interval on iPSC lines differentiated into Macrophages and exposed to 10 stimuli that emulate responses to pro/anti-inflammatory cytokines and bacterial or viral infections at two different timepoints.

Supplementary Data 10. Type I error measures and False Discovery Rate values on Developmental, Adult, Activated macrophages and Lung datasets.

Supplementary Data 11. Biological Process (BP) ontology term enrichment test for each set of DEG in the Developmental Atlas.

Supplementary Data 12. Biological Process (BP) ontology term enrichment test for each set of DEG of the Adult multi-tissue Atlas.

Supplementary Data 13. Biological Process (BP) ontology term enrichment test for each set of DEG of the Lung Cell Atlas.

Supplementary Data 14. Polymorphic, divergent and confounding factors data at gene level.