

## Development of a pipeline for exploratory metabolic profiling of infant urine

**Frances Jackson<sup>1</sup>, Nancy Georgakopoulou<sup>1</sup>, Manuja Kaluarachchi<sup>2</sup>, Michael Kyriakides<sup>1</sup>, Nicholas Andreas<sup>3</sup>, Natalia Przysieczna<sup>3</sup>, Matthew J. Hyde<sup>3</sup>, Neena Modi<sup>3</sup>, Jeremy K. Nicholson<sup>1,4</sup>, Anisha Wijeyesekera<sup>1\*</sup> and Elaine Holmes<sup>1,4</sup>**

<sup>1</sup>*Division of Computational and Systems Medicine, Department of Surgery and Cancer, Imperial College London, South Kensington Campus, SW7 2AZ, United Kingdom*

<sup>2</sup>*Metabometrix Ltd, Bioincubator, Prince Consort Road, South Kensington, London, SW7 2AZ, United Kingdom*

<sup>3</sup>*Section of Neonatal Medicine, Department of Medicine, Imperial College London, Chelsea and Westminster Hospital Campus, SW10 9NH, United Kingdom*

<sup>4</sup>*MRC-NIHR National Phenome Centre, Department of Surgery and Cancer, Imperial College London, Hammersmith Hospital Campus, W12 0NN, United Kingdom*

## Supporting Information Legends.

**Figure S1.** Schematic of urine extraction via centrifugation apparatus to extract urine from cotton wool

**Figure S2.** Urine dilution series and 1D  $^1\text{H}$  NMR experimental design

**Figure S3.** Principal Components Analysis (PCA) scores scatter plot showing cotton ball and diaper contamination urine profiles analyzed by 1D  $^1\text{H}$  NMR spectroscopy. Key: star = blank urine; circles = urine from cotton wool balls not subject to freeze thaw cycle; squares = urine from cotton wool balls subject to freeze thaw cycle; triangles = urine from diapers and cotton wool balls

**Figure S4.** Orthogonal Projections to Latent Structures Discriminant Analysis (O-PLS-DA) loadings coefficients plot showing discriminatory metabolites separating between a cotton wool ball that was squeezed (negative direction) vs centrifuged (positive direction) – contaminants 1: Isobutanol ( $\delta 0.88$ , -CH<sub>3</sub>), 2: Tert-butanol ( $\delta 1.25$ , -CH<sub>3</sub>) 3: Acetone ( $\delta 2.23$ , -CH<sub>3</sub>).

Figure S1

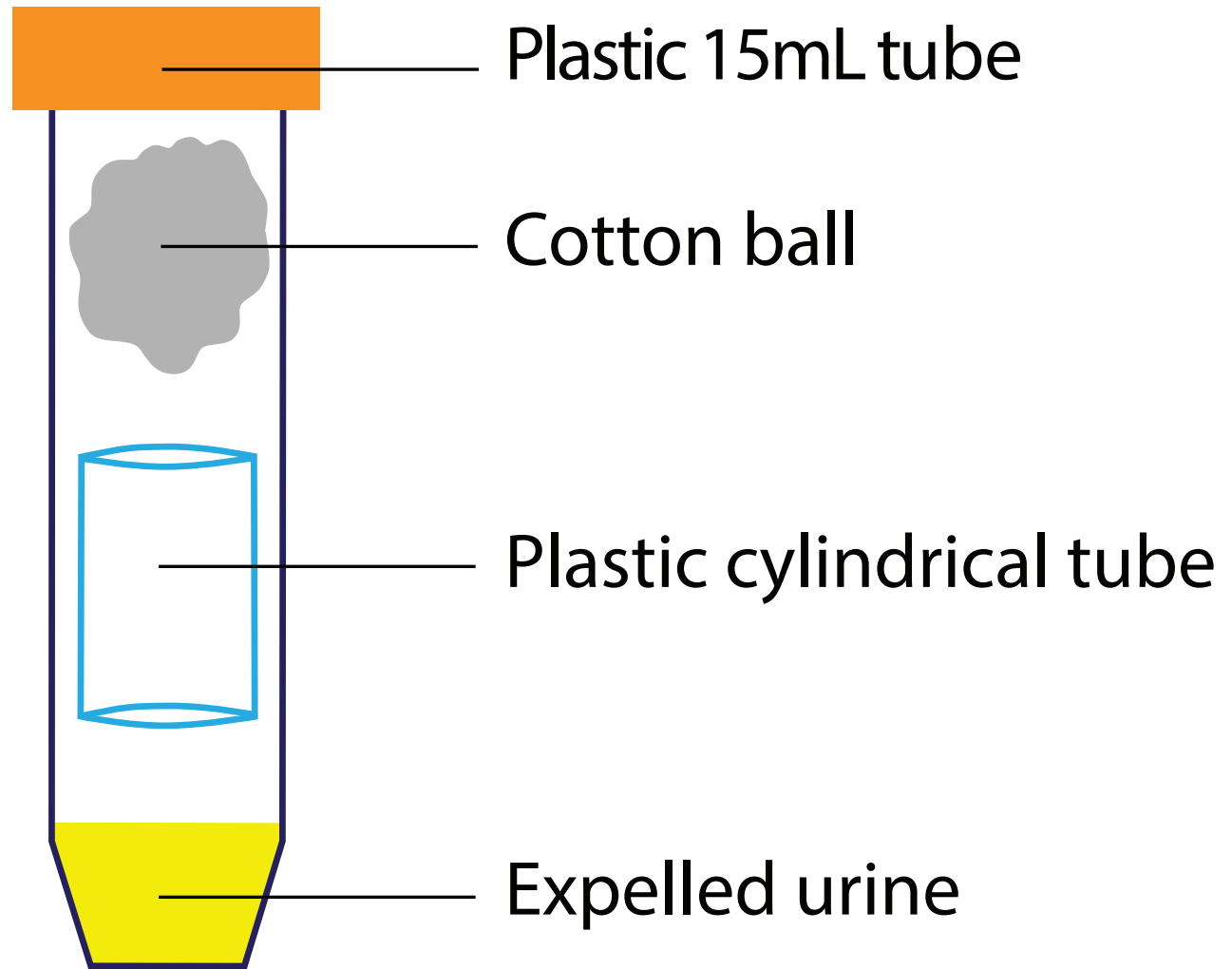


Figure S2

Urine volume	Volume of water (ml)	Volume of phosphate buffer (ml)	Number of acquisitions performed
Volume 1: 540ml	0	60	32
Voume 2: 270ml	270	60	32
			128
Voume 3: 135ml	405	60	32
			512
Voume 4: 68ml	472	60	32
			2048

Figure S3

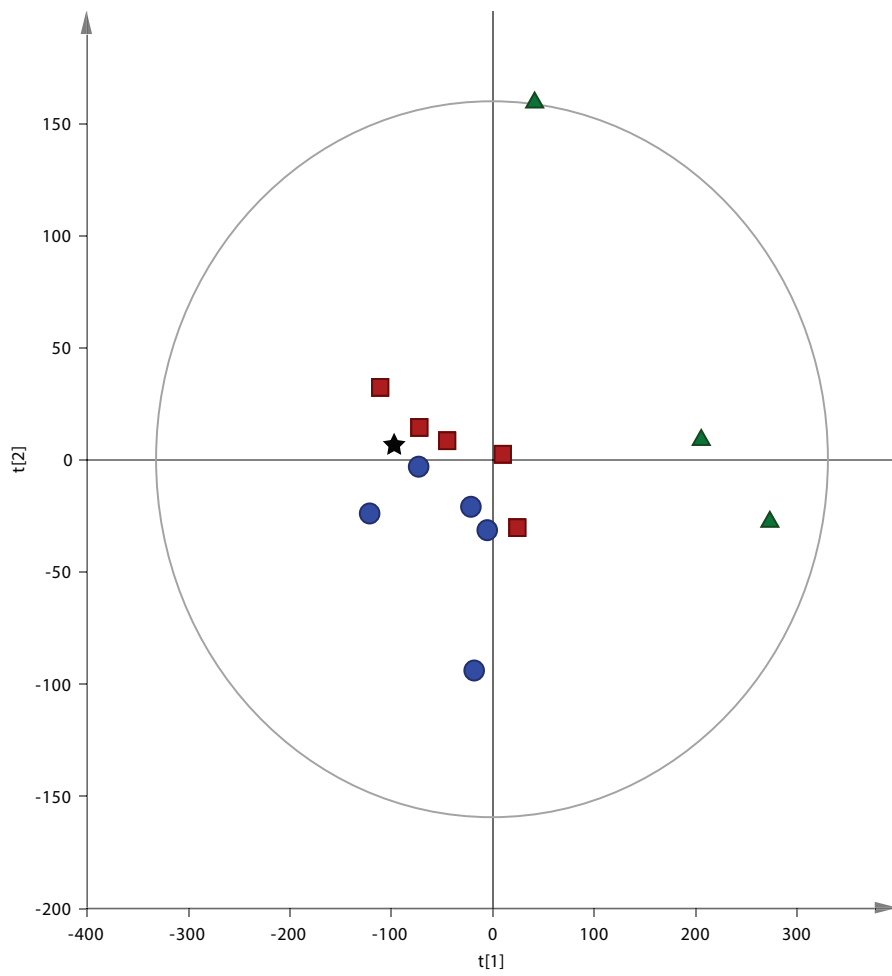


Figure S4

