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Background

- Advances in single cell analysis make it possible to capture the spatial location of single cells and to develop a Common Coordinate Framework (CCF) for the healthy human adult body, see Fig. 1.
- The Human Reference Atlas (HRA) [1] represents Anatomical Structures, Cell Types, plus Biomarkers (ASCT+B) linked to 3D representations of anatomical structures and 2D illustrations of Functional Tissue Units (FTUs), all of which are mapped to Uberon and Cell ontology IDs, if available, see Fig. 2.

References


HuBMAP CCF Portal:
Number of ASCT+B tables: 26
Total number of 3D organ models: 53
Total number of 2D FTUs: 8
https://hubmapconsortium.github.io/ccf

Discussion

- 20 FTUs for the 4th HRA release will become available in December 2022.
- Blood Vasculature will be added to FTUs and linked to ASCT+B tables at single-cell level.
- 2D-cell segmentation will be automatized using machine learning.
- FTU SVGs will be linked to experimental data analogous to the KPMP Kidney Tissue Atlas Explorer [3].

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