

Asteria™ Benchtop Kit for 3' single cell RNA-seq

Single-cells. Anywhere. Anytime.

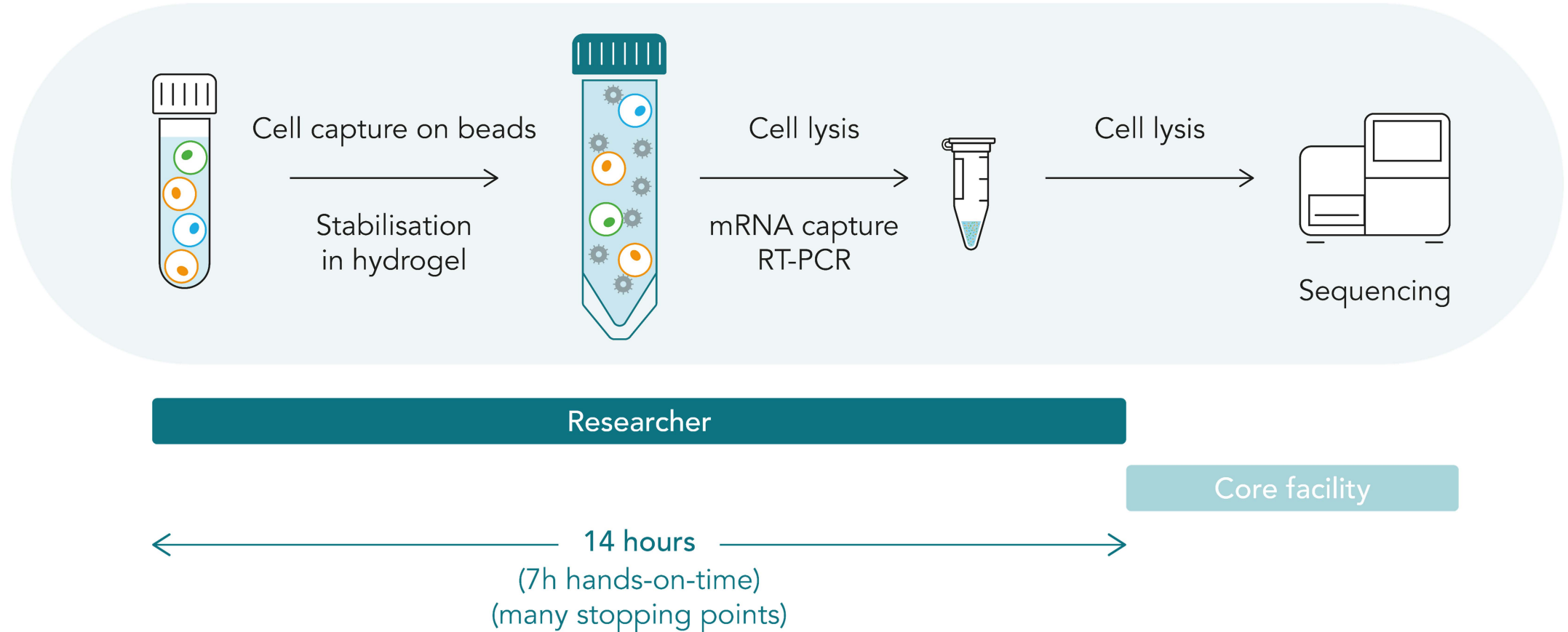


Asteria™ Benchtop Kit for 3' single cell RNA-seq



- ✓ Autonomy of usage and access
- ✓ Available at time of need
- ✓ Practical for multi-site projects
- ✓ Handles large and fragile cells
- ✓ Compatible with infectious samples & animal facilities
- ✓ Minimizes cell transcriptomic stress

Asteria™ sample preparation workflow

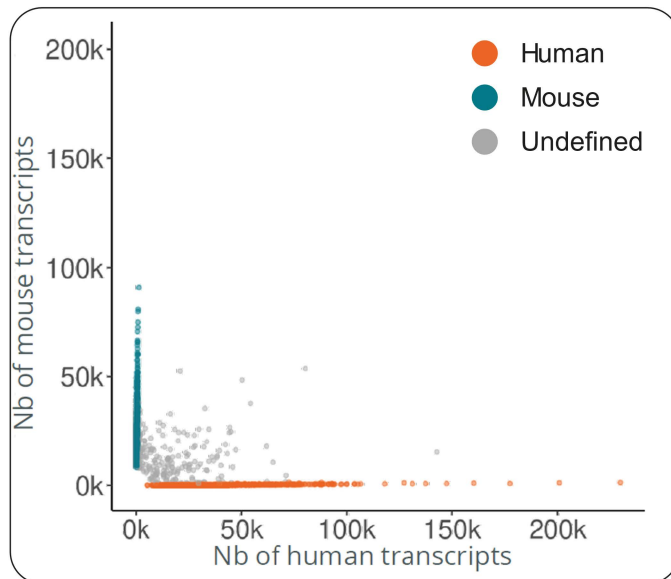


Asteria™ kit performances (1)

Mixed species experiments

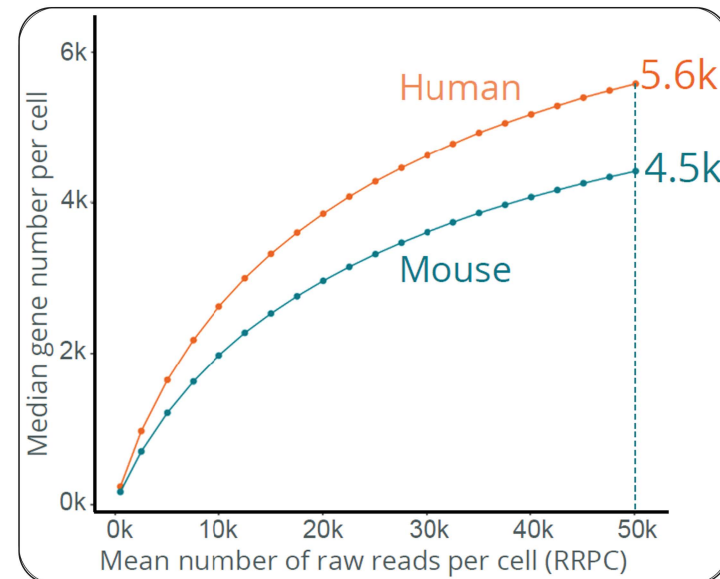
(5 000 human cells mixed with 5 000 mouse cells)

Barcode purity:



- Cell capture rate: 45%
- Cell multiplet rate: 3%

Gene recovery:

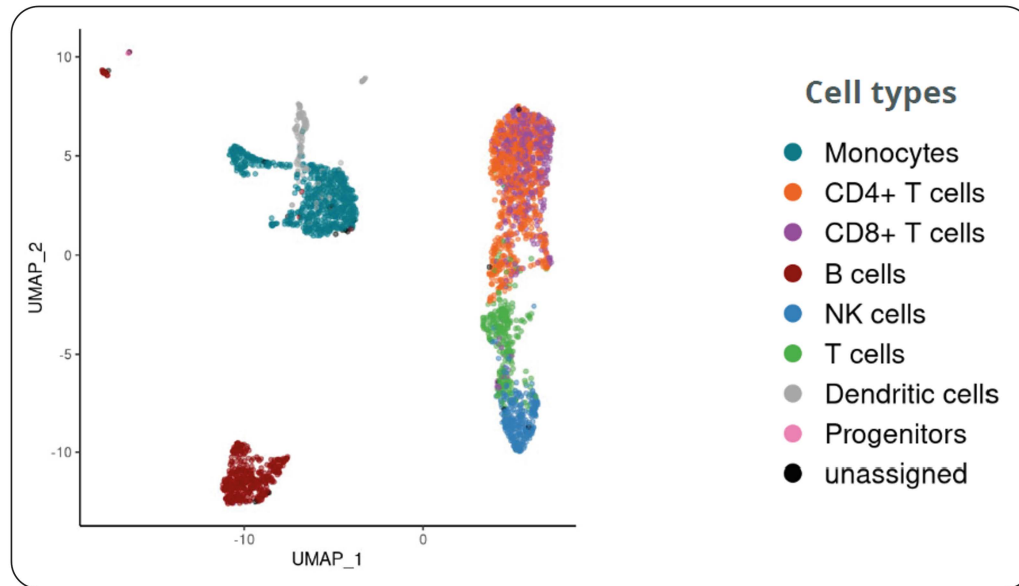


Med. Transcripts/cell (at 50kRRPC):
17.8k (human) / 12.6k (mouse)

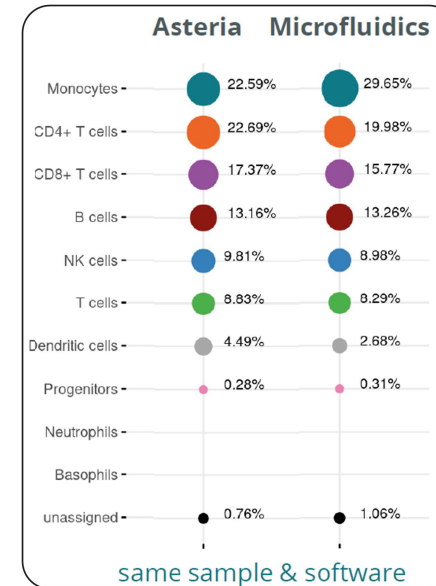
Asteria™ kit performances (2)

PBMCs identification (10 000 human PBMCs)

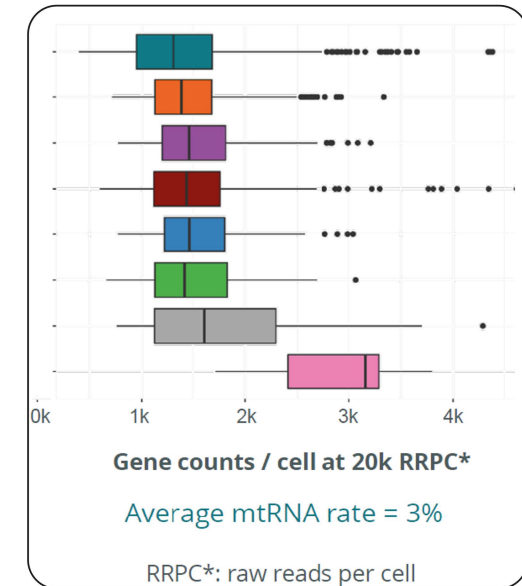
Clusters detected:



Cell types:



Genes per cell:



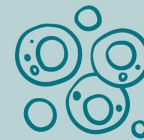
- All PBMC clusters detected
- Cell type proportion comparable to microfluidic approaches

scRNA on various cell types models

CONFIRMED CELL TYPES



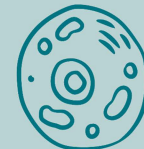
Human cardiomyocytes
(large cells)



Brain organoids
(FACS-sorting)



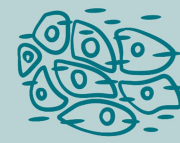
Oligodendrocytes
(FACS-sorting)



Pancreas islet cells

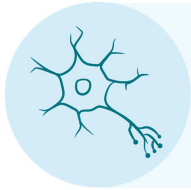


Murine lung cells

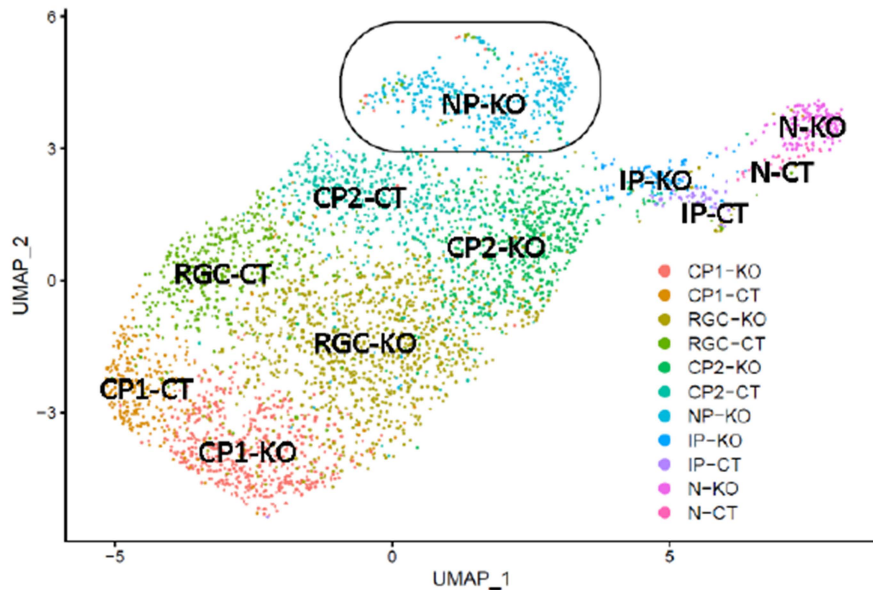


Skin cells

Collaboration #1



Sample type: Neural Progenitor Cells
Collaboration: Pr. B. Hassan (Paris Brain Institute)



SCIENCE ADVANCES | RESEARCH ARTICLE

DEVELOPMENTAL NEUROSCIENCE

The temporal balance between self-renewal and differentiation of human neural stem cells requires the amyloid precursor protein

Khadijeh Shabani¹, Julien Pigeon¹, Marwan Benaissa Touil Zariouh¹, Tengyuan Liu¹, Azadeh Saffarian^{2†}, Jun Komatsu^{2†}, Elise Liu¹, Natasha Danda¹, Mathilde Becmeur-Lefebvre³, Ridha Limame¹, Delphine Bohl¹, Carlos Parras¹, Bassem A. Hassan^{1*}

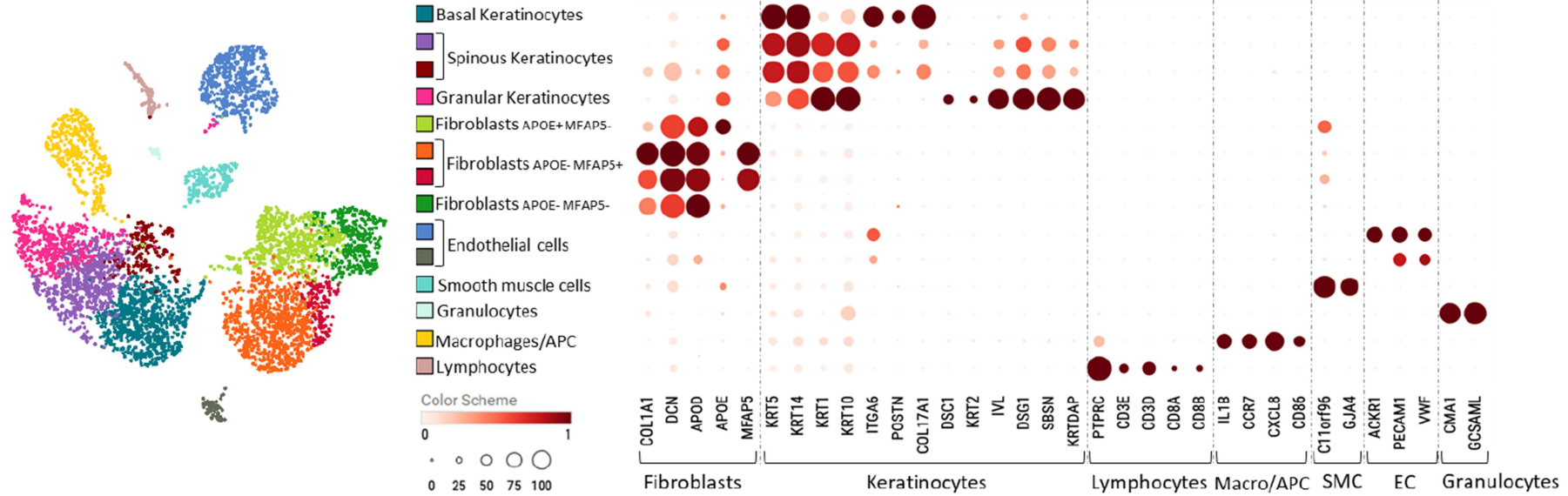
Asteria enabled the identification of a **new neural progenitor cell population** in APP Knock-Out conditions

Collaboration #2



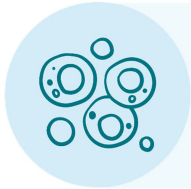
Sample type: Dermis tissue

Collaboration: Pr. J.D. Bouaziz (Research Institute Saint-Louis)

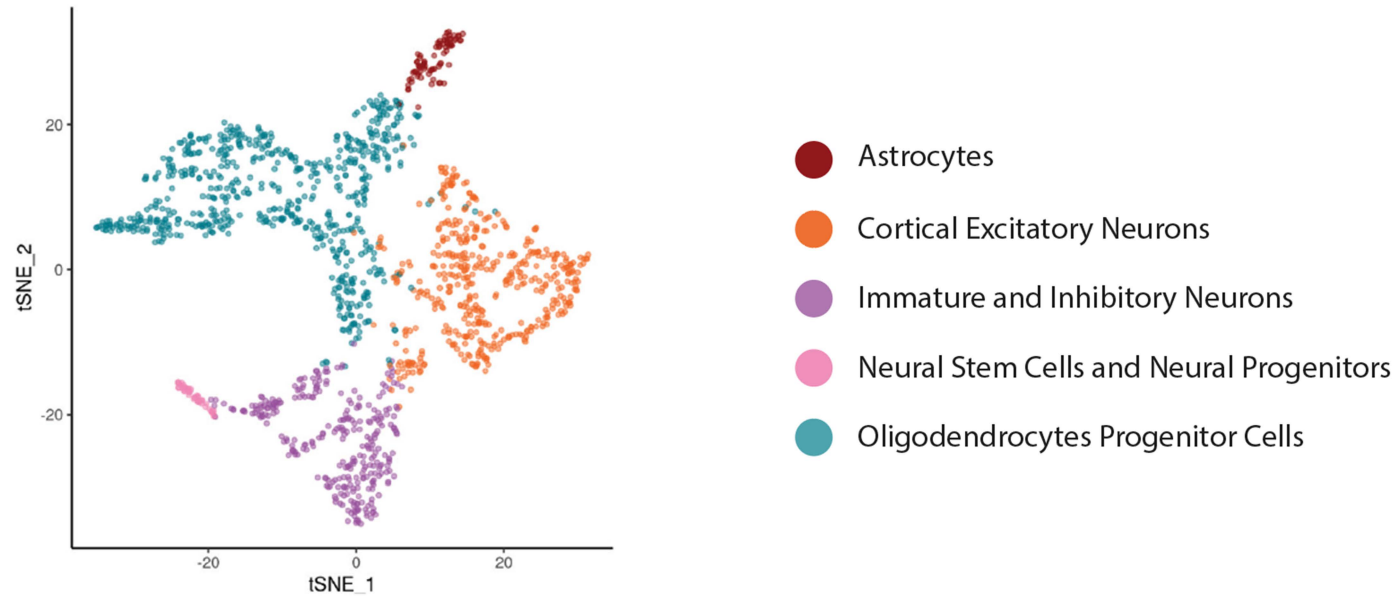


Asteria is **efficient** to dissect the complexity and heterogeneity of healthy **skin tissue**

Collaboration #3

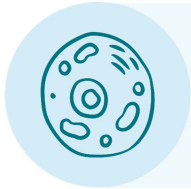


Sample type: Brain organoids
Collaboration: Dr. P. Ravassard (Paris Brain Institute)

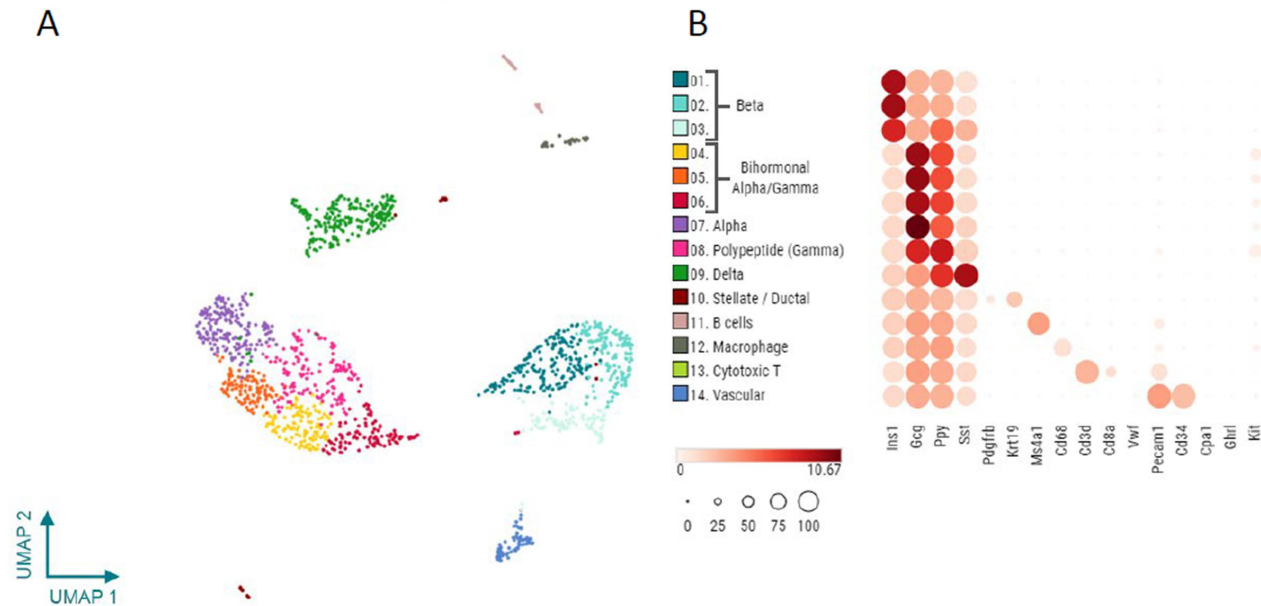


Asteria achieved the capture and **identification of neural cell populations** (on-going collaboration)

Collaboration #4

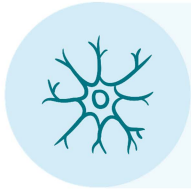


Sample type: Pancreatic islet cells
Collaboration: Dr. B. Bertrand (Institute Saint-Antoine)

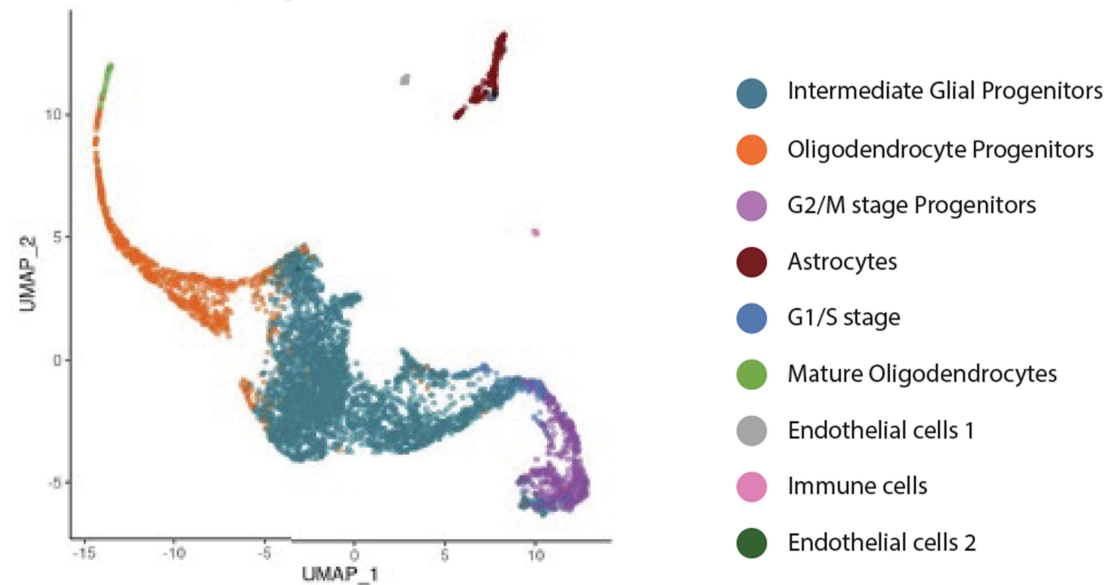


Asteria enabled the characterization of **pancreatic islet cell types**
(on-going collaboration)

Collaboration #5

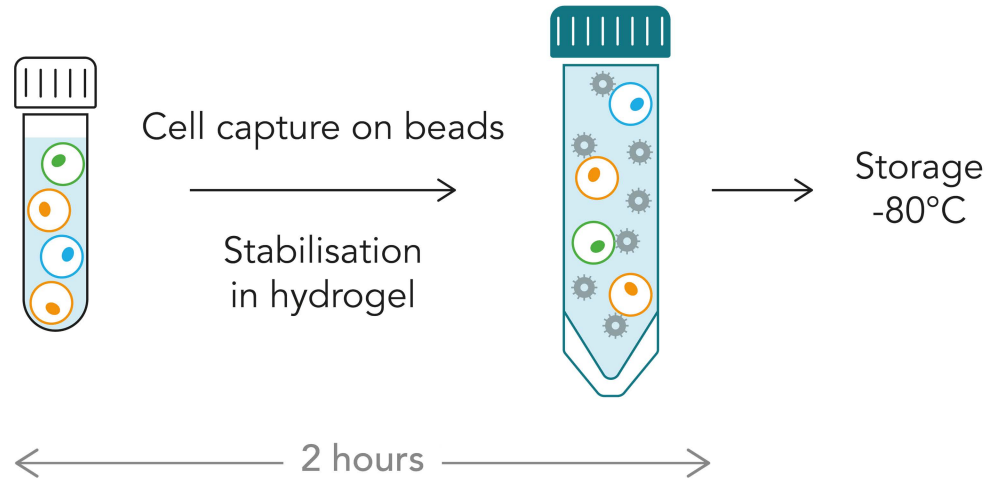


Sample type: FACS-sorted brain cells
Collaboration: Dr. E. Huillard (Paris Brain Institute)

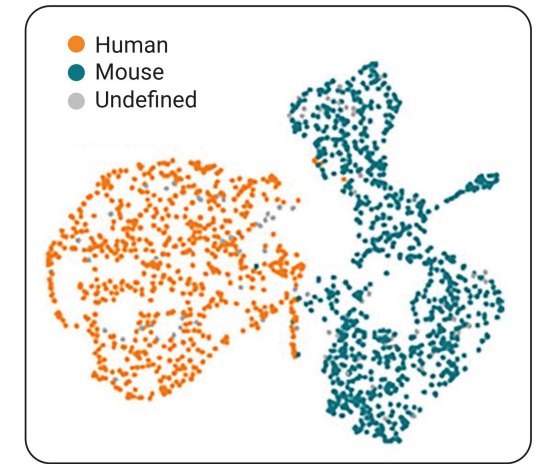
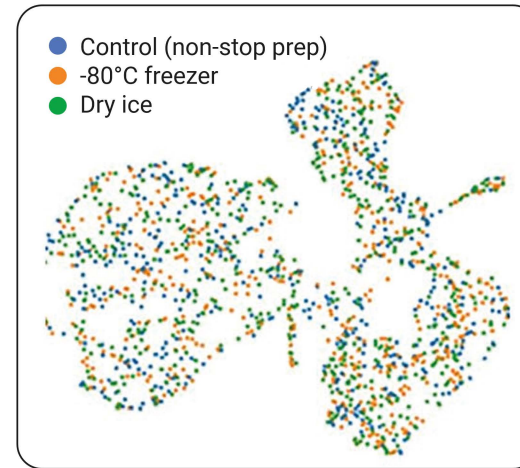


Asteria **identified** different **cell cycles stages**
of oligodendrocytes (on-going research)

Asteria™ early stopping point



- Flexibility to manage sample arrival time
- Freezing does not alter the transcriptome
- Possibility to transfer samples to core facility



Sample	Cell capture rate	Median human gene counts / human cell	Median human transcript counts / human cell	Median mouse gene counts / mouse cell	Median mouse transcript counts / mouse cell	Median % mitochondrial transcripts / cell
Control	40%	5 719	18 777	4 856	14 413	4.0%
Early_stop_-80°C	42%	5 643	19 998	4 729	14 022	5.0%
Early_stop_dry_ice	44%	5 524	18 602	4 795	14 462	4.5%



Thank you for your attention