

Mapping ALS neurodegeneration with spatial multiomics

The ALS challenge

Why spatial multiomics?

Meet COMET™

From data to discovery

The ALS challenge

The ALS challenge

Why spatial multiomics?

Meet COMET™

From data to discovery

Amyotrophic Lateral Sclerosis (ALS) is a rare and fatal neurodegenerative disorder that affects upper and lower motor neurons. ALS results in muscle weakness, paralysis, and ultimately respiratory failure. The disease is characterized by rapid progression and involvement of multiple, heterogeneous brain regions. This results in limited treatment options for ALS patients, and partial cognitive impairment for up to 50% of patients .¹⁻⁴

As the population ages, the number of cases is projected to increase globally by 69% by 2040 .⁵

Affects 2 to 5 people out of 100,000 worldwide

90% sporadic patients, with no family history

1.5x more prevalent among men compared to women

Limited treatment options for ALS patients

2-5 years: the average life expectancy

Every 90 min someone is diagnosed

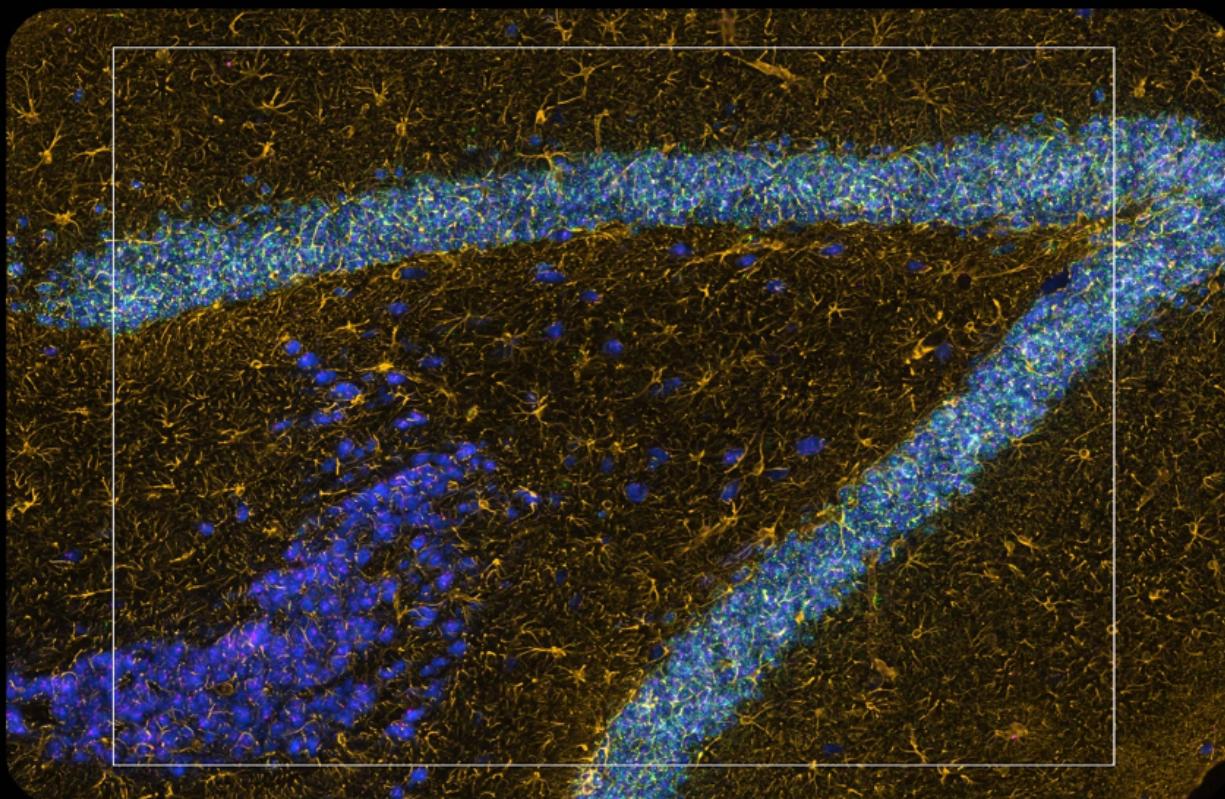
References

1. ALS by the numbers. Source: the ALS Association. Accessed via: <https://healthdiscovery.org/infographic/als-by-numbers/>
2. Martin S et al (2017) What causes amyotrophic lateral sclerosis? *F1000Research* 6:371

3. Crockford C et al (2018) ALS-specific cognitive and behavior changes associated with advancing disease stage in ALS. *Neurology* 91(15): e1370-e1380.
4. Manjaly ZR et al (2010) The sex ratio in amyotrophic lateral sclerosis: A population based study. *Amyotroph Lateral Scler* 11(5): 439-42.
5. Arthur KC et al (2016) Projected increase in amyotrophic lateral sclerosis from 2015 to 2040. *Nat Commun* 7:12408.

Why use spatial multiomics in neurodegenerative disease research?

Mouse ALS
brain frozen
section



Do you want to explore the full dataset?

Download the white paper

The ALS challenge

Why spatial multiomics?

Meet COMET™

From data to discovery

 Molecular phenotyping

 Biomarker development

 Target discovery and validation

 Stratification of ALS phenotypes

Using COMET™ to access new depths in neurodegenerative disease research

COMET™ translates complexity into clarity by enabling rapid discovery through the integration of multiomics data into a single, intuitive system.

Do you want to learn more about COMET™?

[Download the brochure](#)

The ALS challenge

Why spatial multiomics?

Meet COMET™

From data to discovery

Automated

Get reproducible results with a fully automated same-section spatial multiomics workflow.
From target probe hybridization to imaging, click start and walk away.



An integrated spatial multiomics workflow for every lab

COMET™ is part of a large spatial biology offering, including multimarker panel design, validated reagent database, assay optimization and hyperplexing, and image analysis.

The ALS challenge

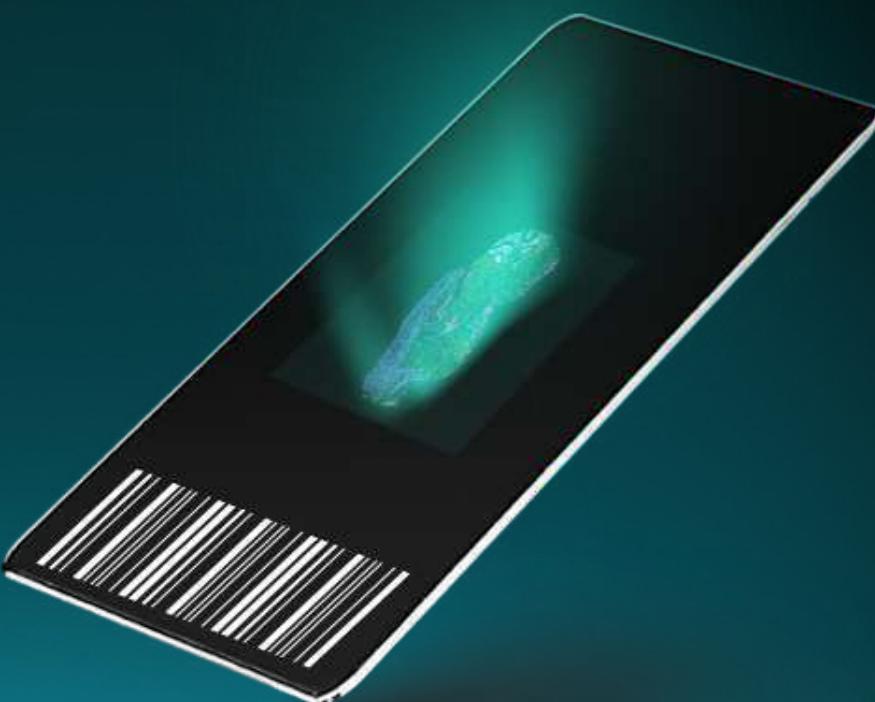
Why spatial multiomics?

Meet COMET™

From data to discovery

Sample preparation

Choose virtually any RNA and protein target. COMET™ offers broad tissue compatibility, supporting FFPE, fixed and fresh frozen tissue samples.



Do you want to experience
COMET™ to accelerate
your research?

Speak to one of our scientists