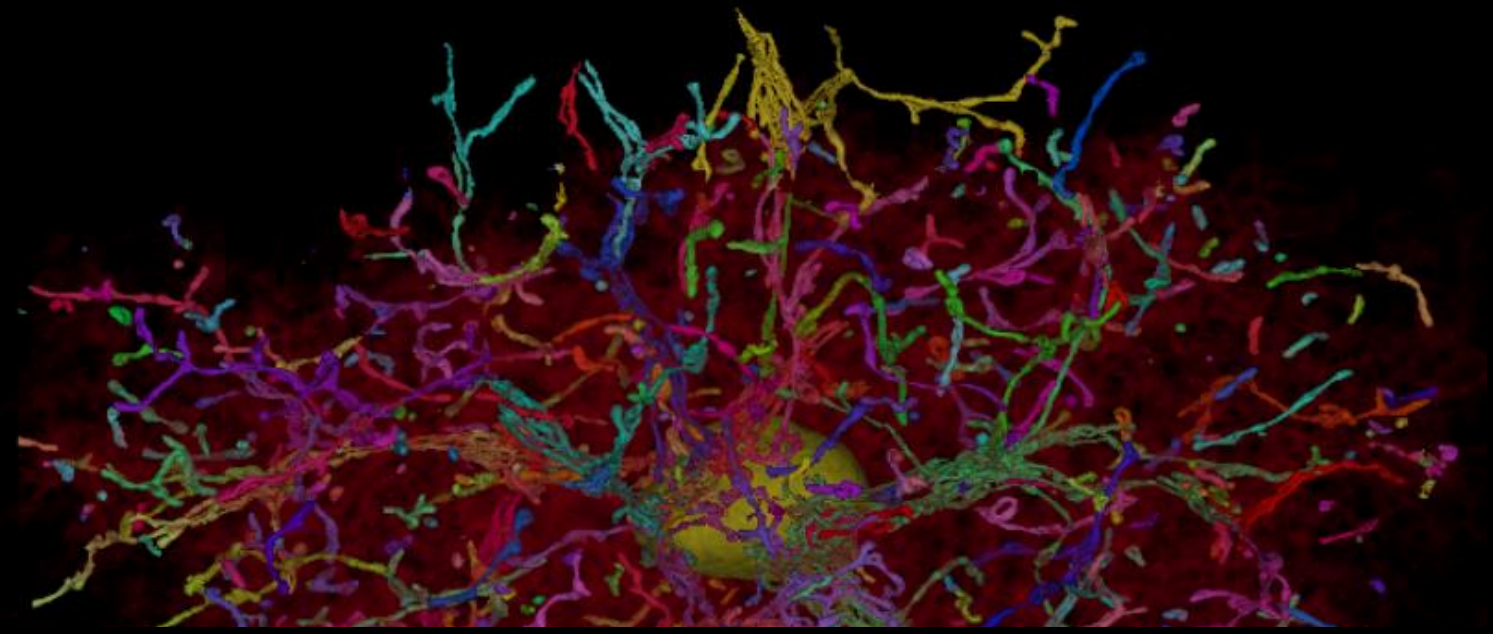
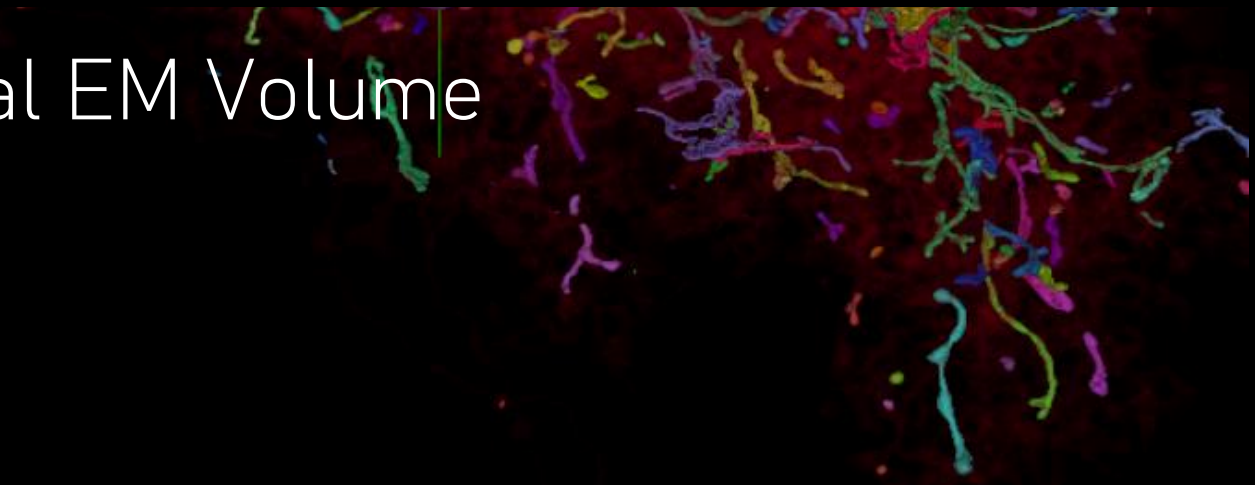


MITOCHONDRIA

Layer 2/3 Serial EM Volume



LARGEST MITOCHONDRION IN VOLUME BY VOXELS

Astrocyte

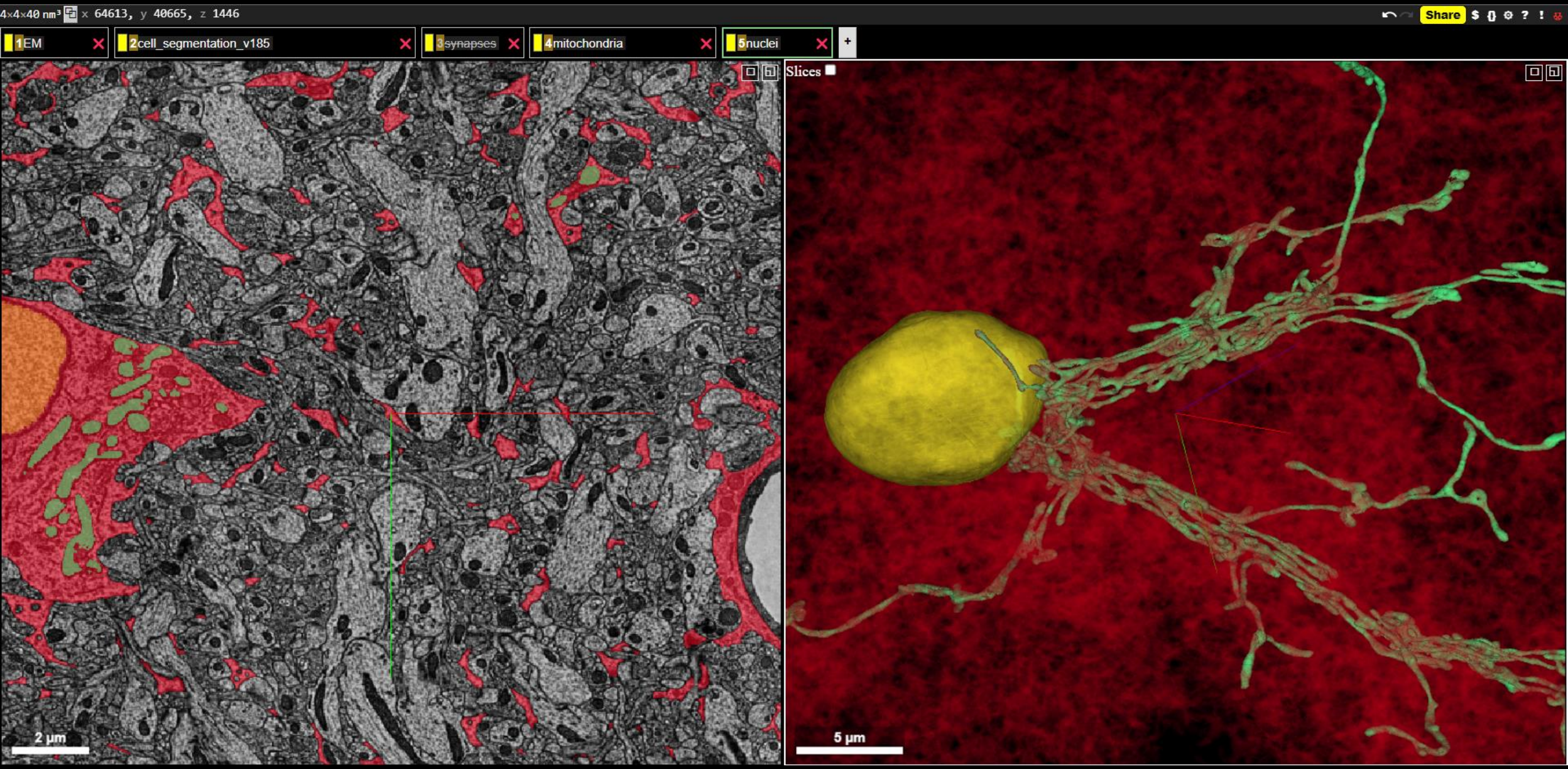
Cell id 648518346349527319

Mito id 866030

all mitochondria in astrocyte 648518346349527319

ASTROCYTE 648518346349527319

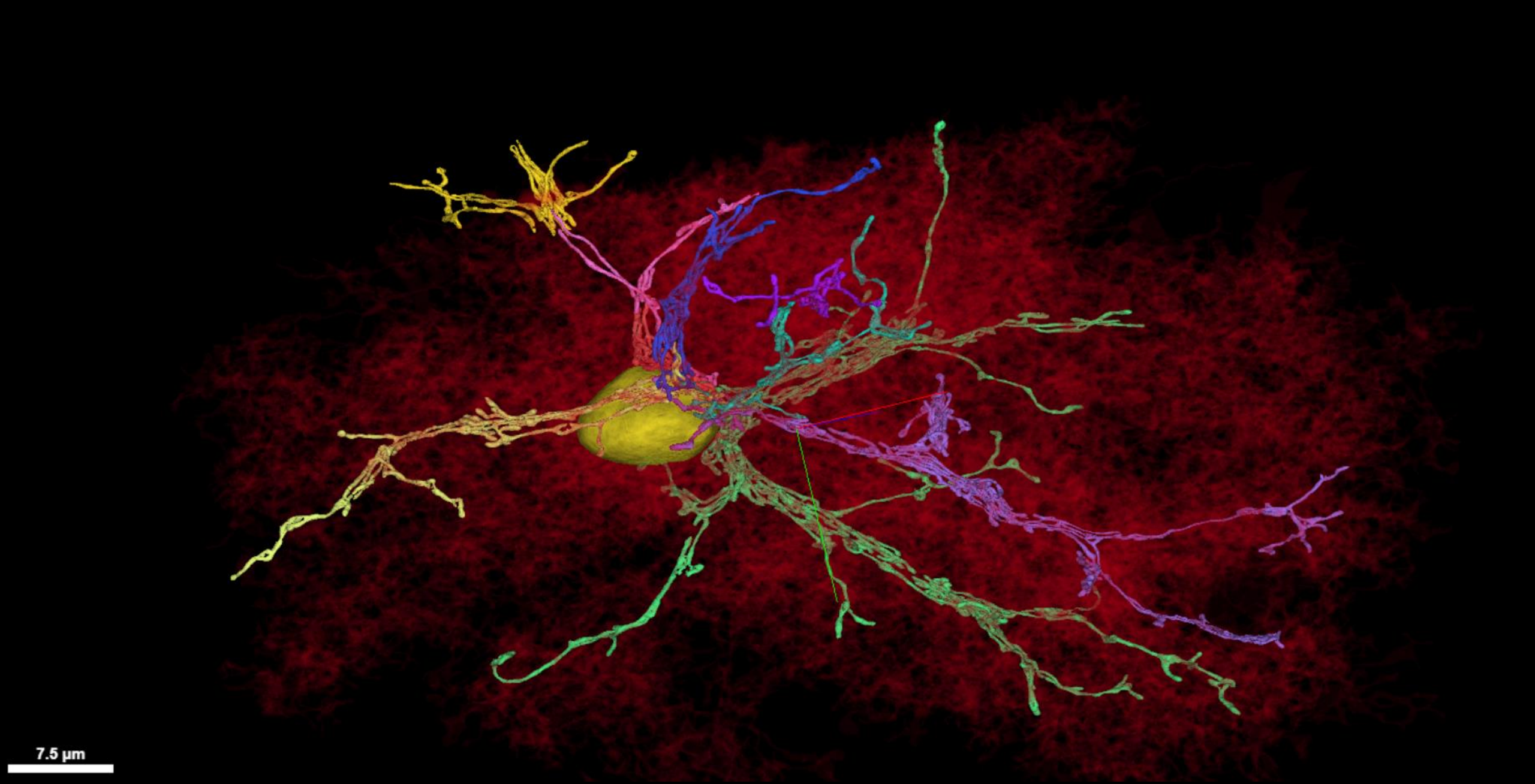
- Contains the largest contiguous mitochondrion (mito id 866030) in the Layer 2/3 volume



largest contiguous mitochondrion in the entire volume (astrocyte 6485183463495273 19)

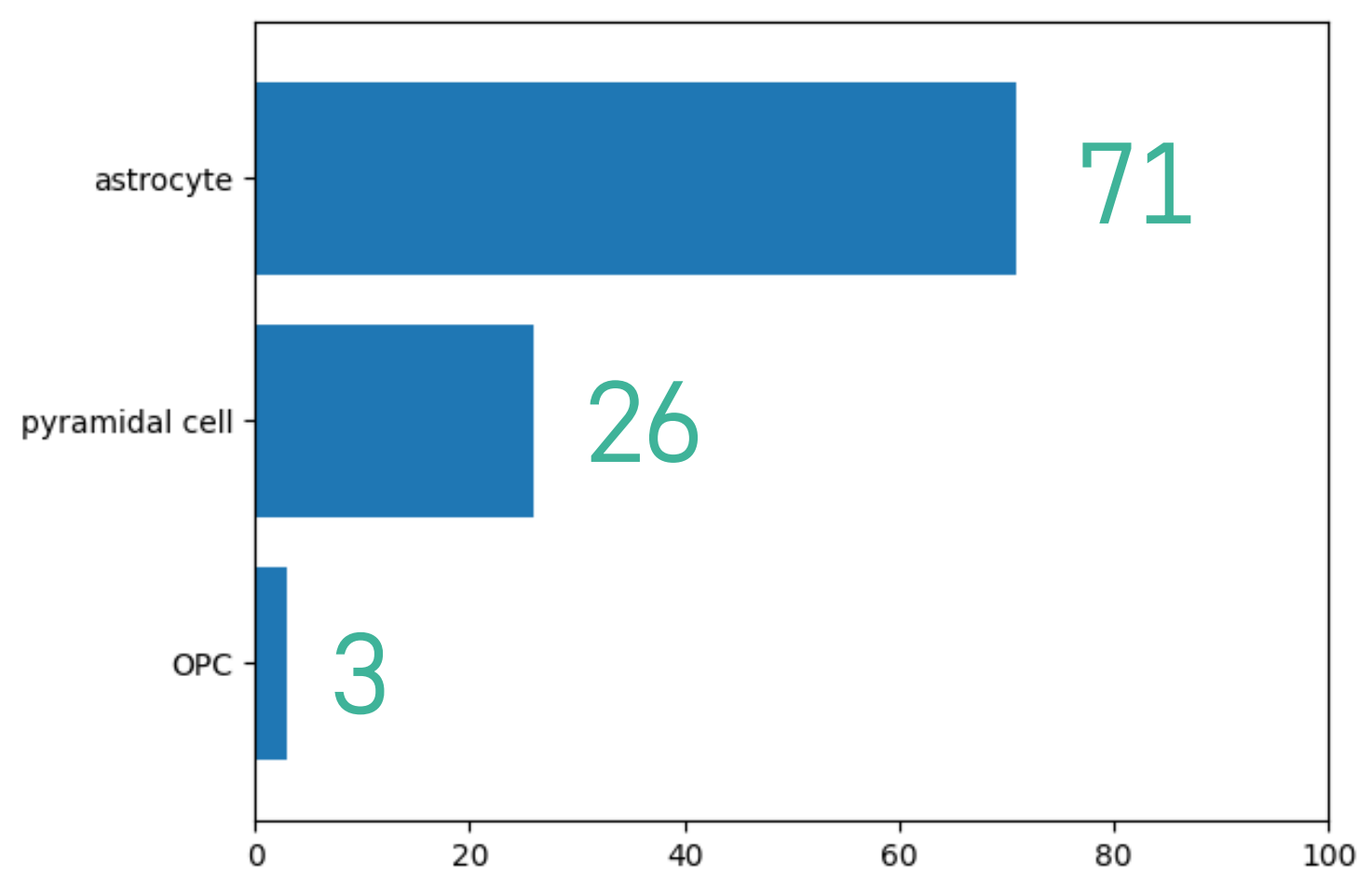
ASTROCYTE 648518346349527319

- Also contains 9 highly branched mitochondria (mito ids 866030, 1083380, 854433, 1083414, 1083667, 739489, 1077732, 961982, 1304222)


7.5 µm

OF THE TOP 100* MITO BY VOXELS MOST ARE IN ASTROCYTES

*for cells identified in the cell subtype table

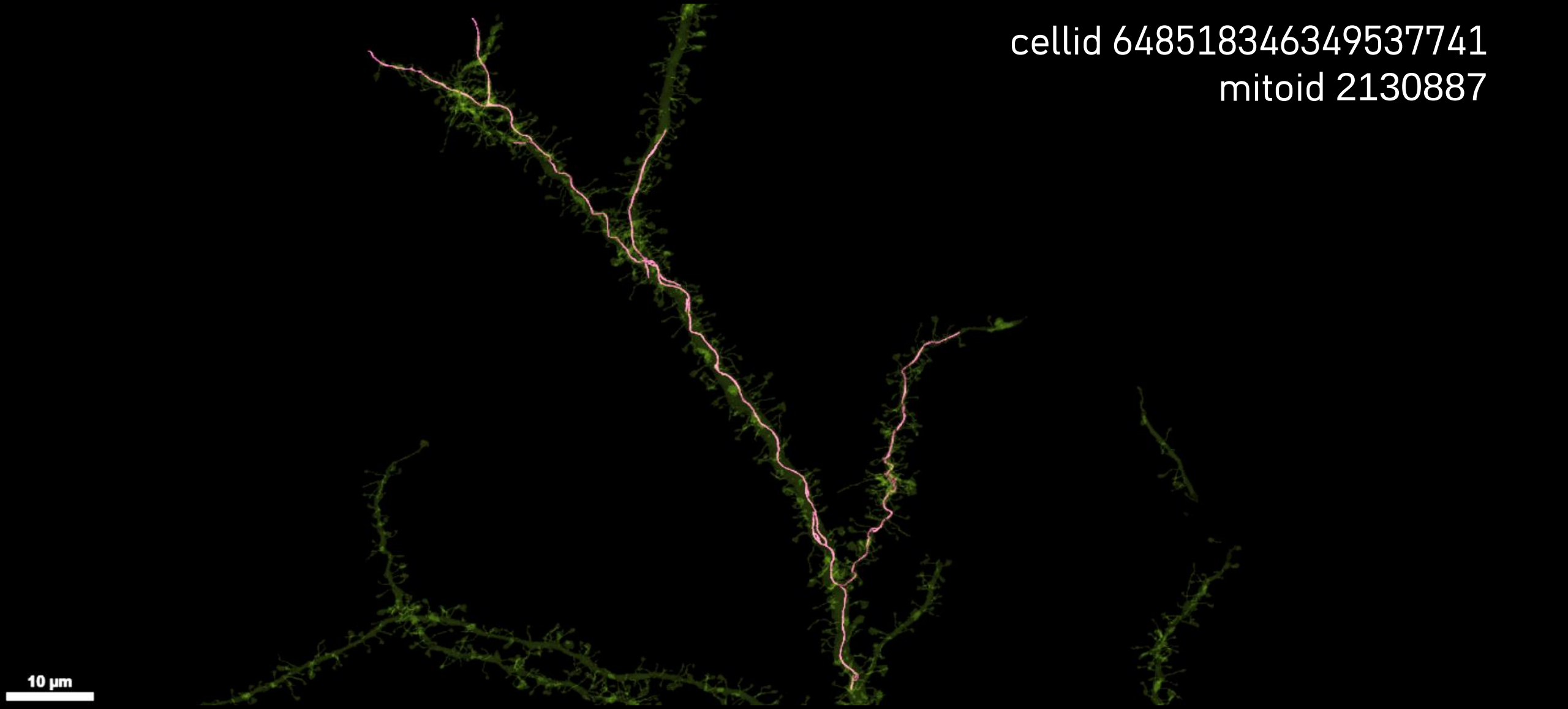


LARGEST MITOCHONDRION IN A NEURON IN THE VOLUME

Excitatory pyramidal neuron

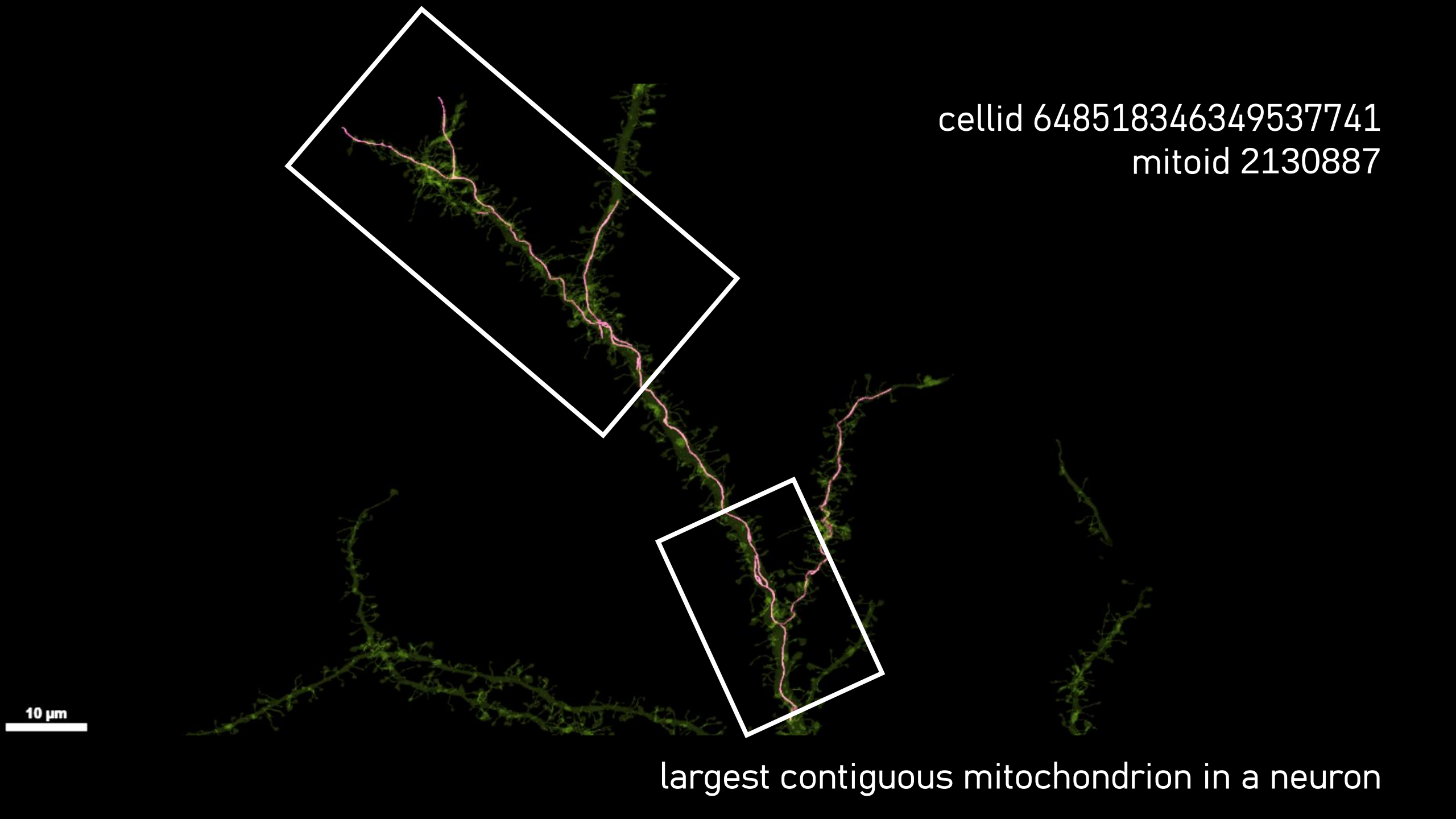
Cell id 648518346349537741

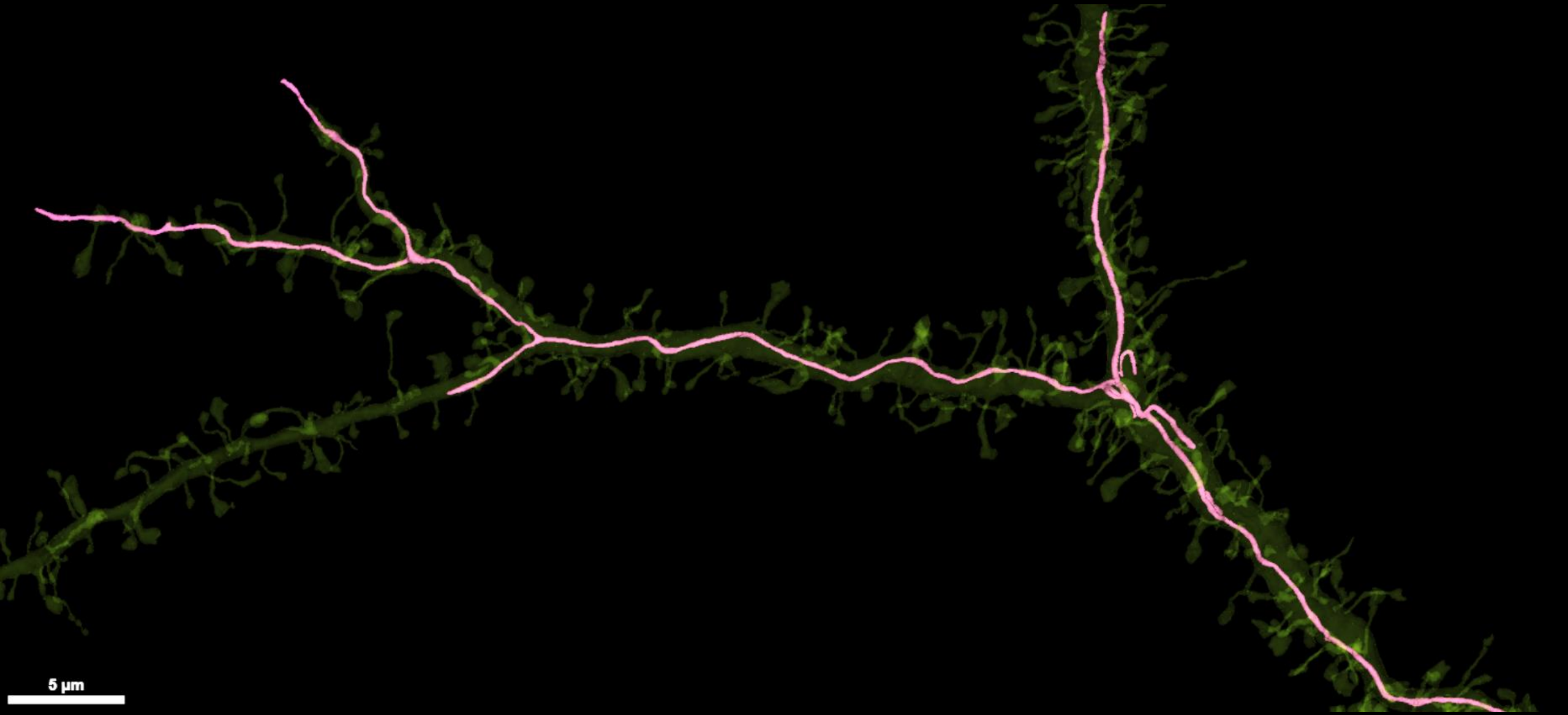
Mito id 2130887



cellid 64851834634953774l
mitoid 2130887

largest contiguous mitochondrion in a neuron


cellid 64851834634953774l
mitoid 2130887
10 µm
largest contiguous mitochondrion in a neuron


5 µm

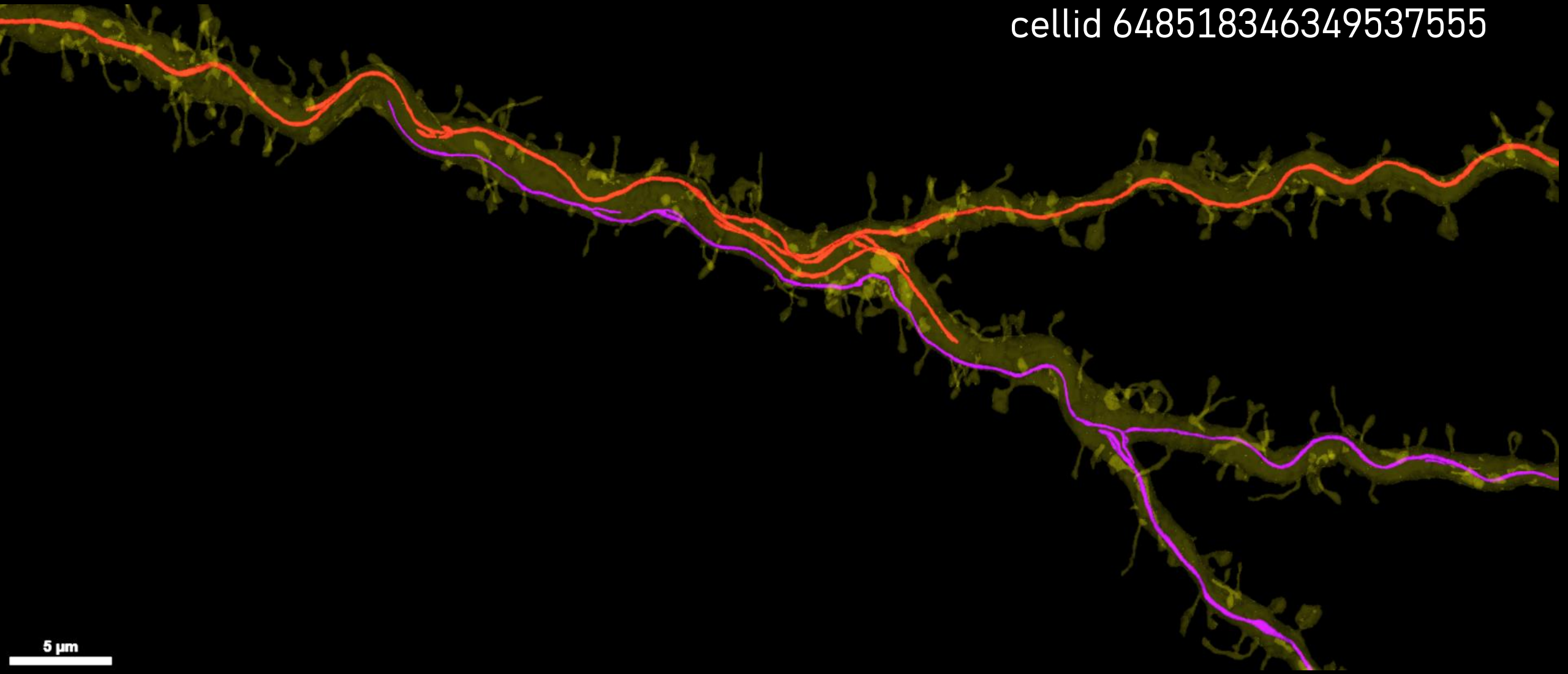

5 µm

LARGE DENDRITIC MITOCHONDRION

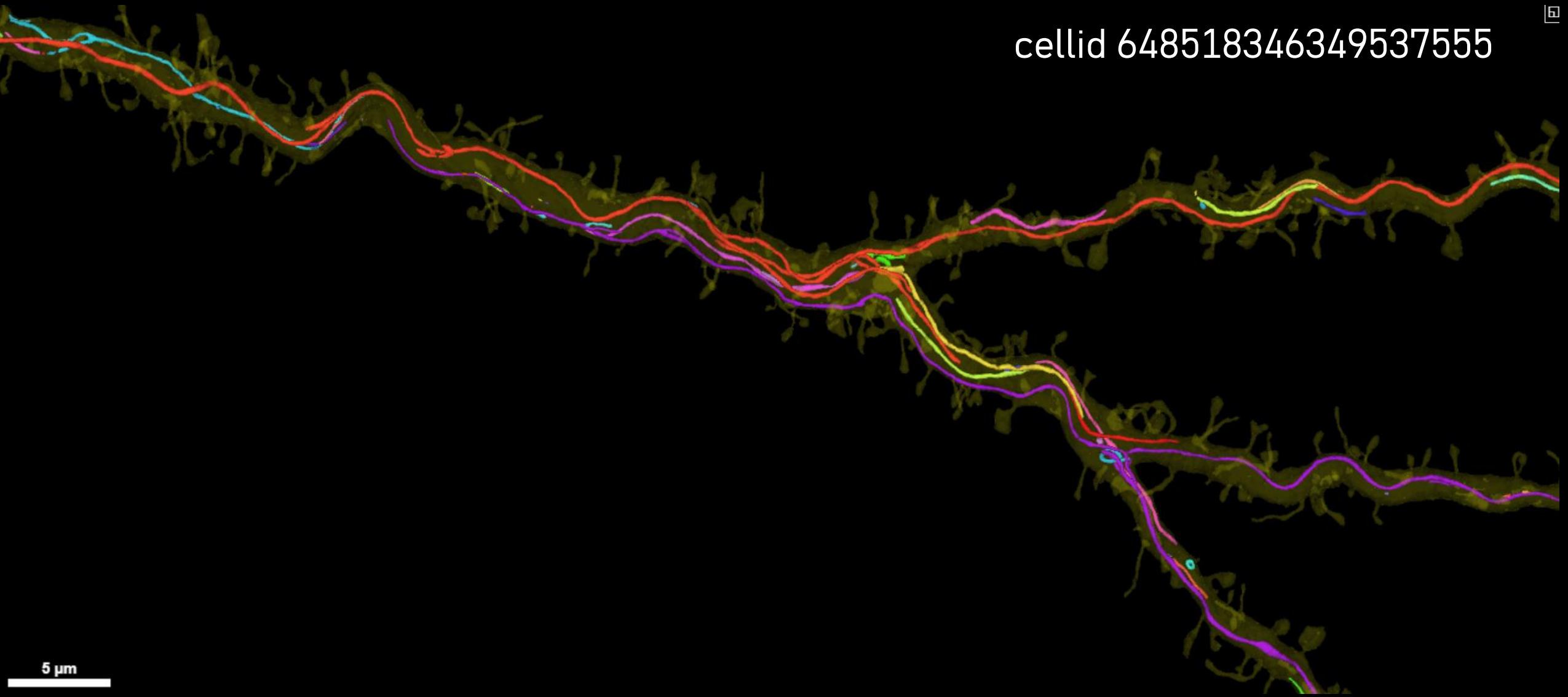
Excitatory pyramidal apical dendrite

Cell id 648518346349537555

Mito ids 2703814 and 2974242



two large mitochondria in a neurite (soma not in volume)



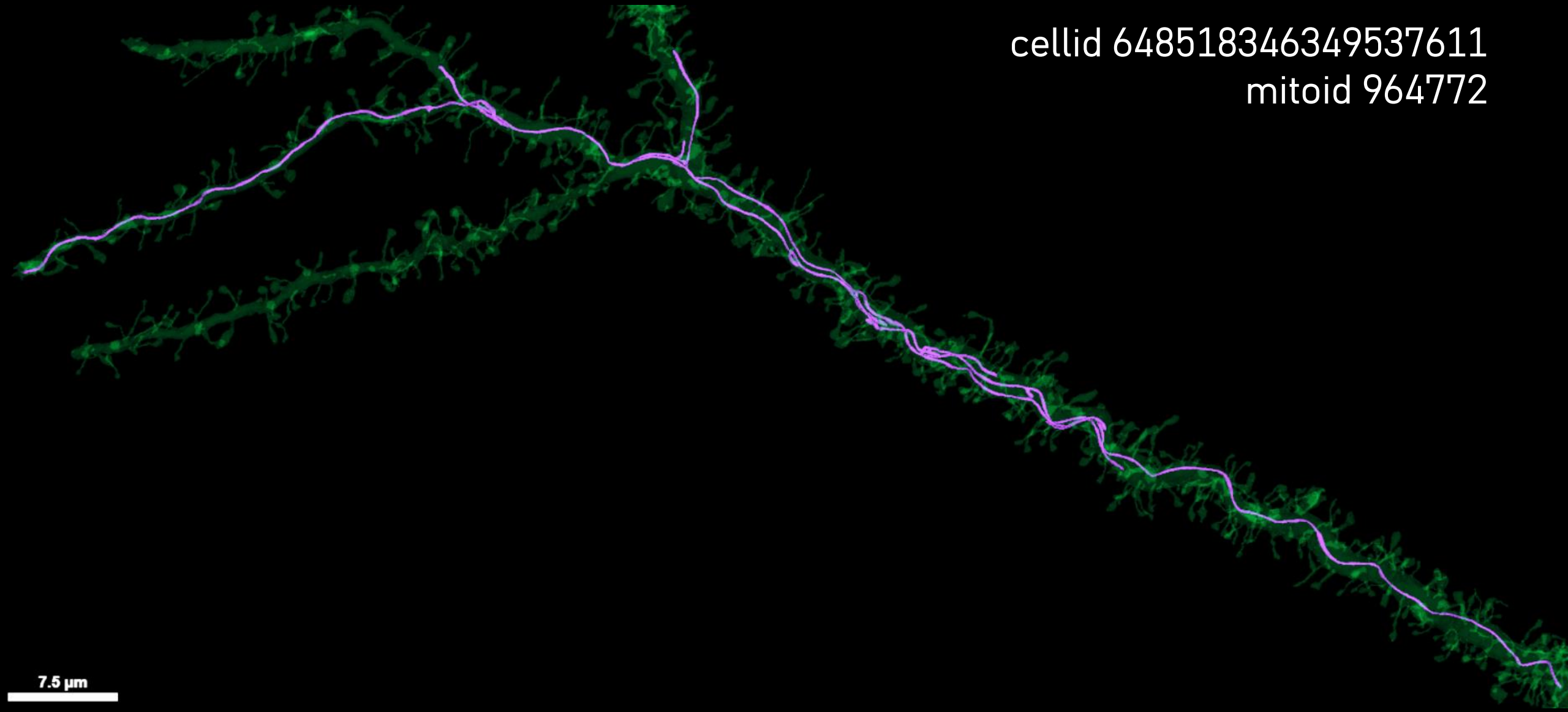
all mitochondria in this part of the neurite (soma not in volume)

ANOTHER LARGE DENDRITIC MITOCHONDRION

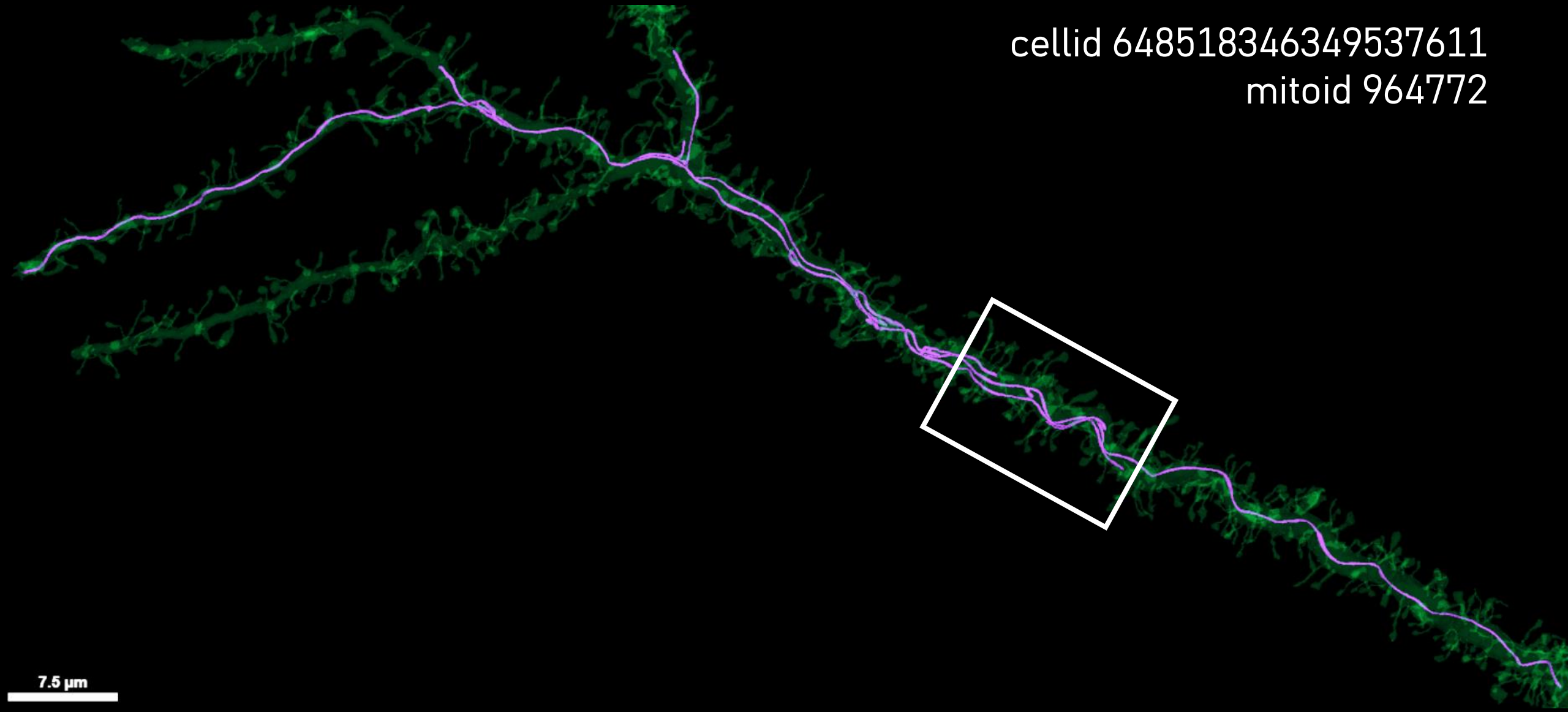
Excitatory pyramidal neuron

Cell id 648518346349537611

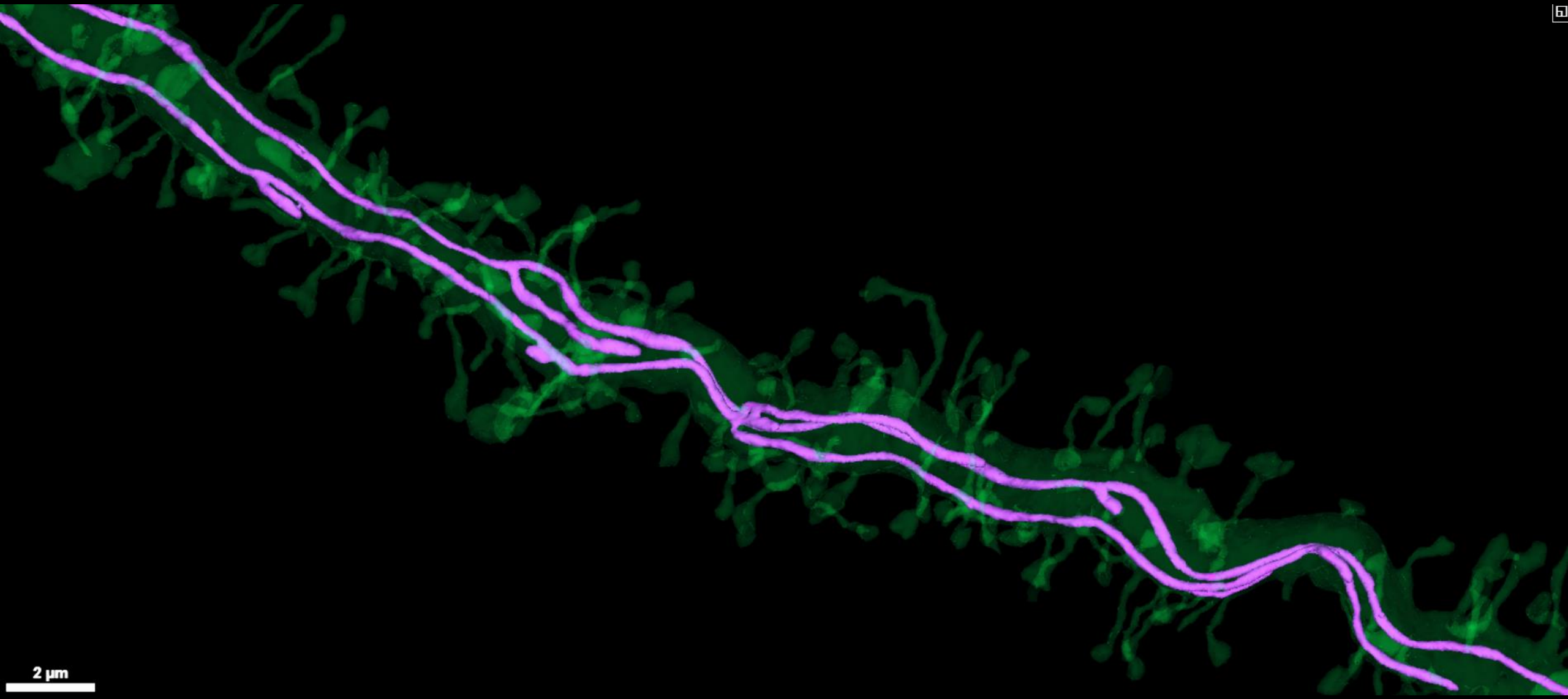
Mito id 964772



another large contiguous mitochondrion in a neuron



another large contiguous mitochondrion in a neuron

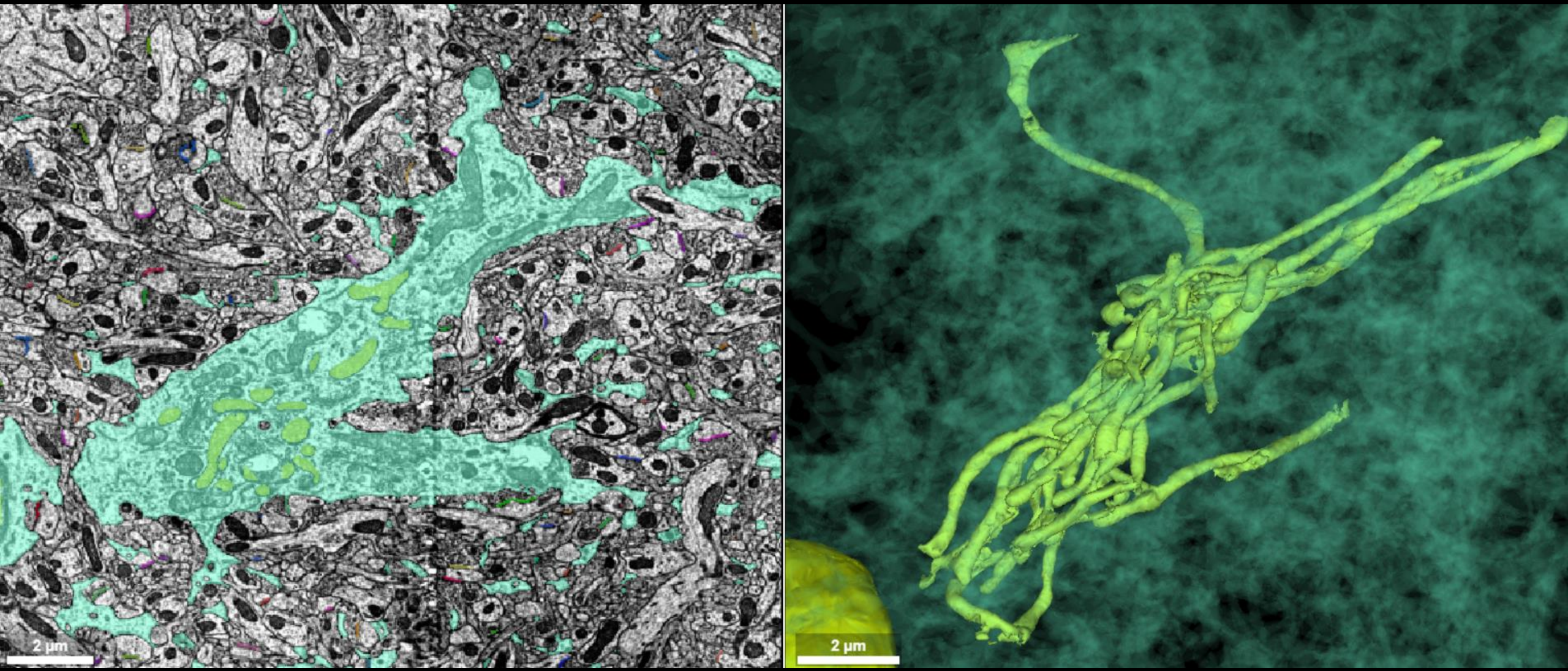

2 µm

LARGEST MITOCHONDRION IN AN OPC GLIAL CELL

Oligodendrocyte Precursor Cell (OPC)

Cell id 6485183463495255 45

Mito id 2187341



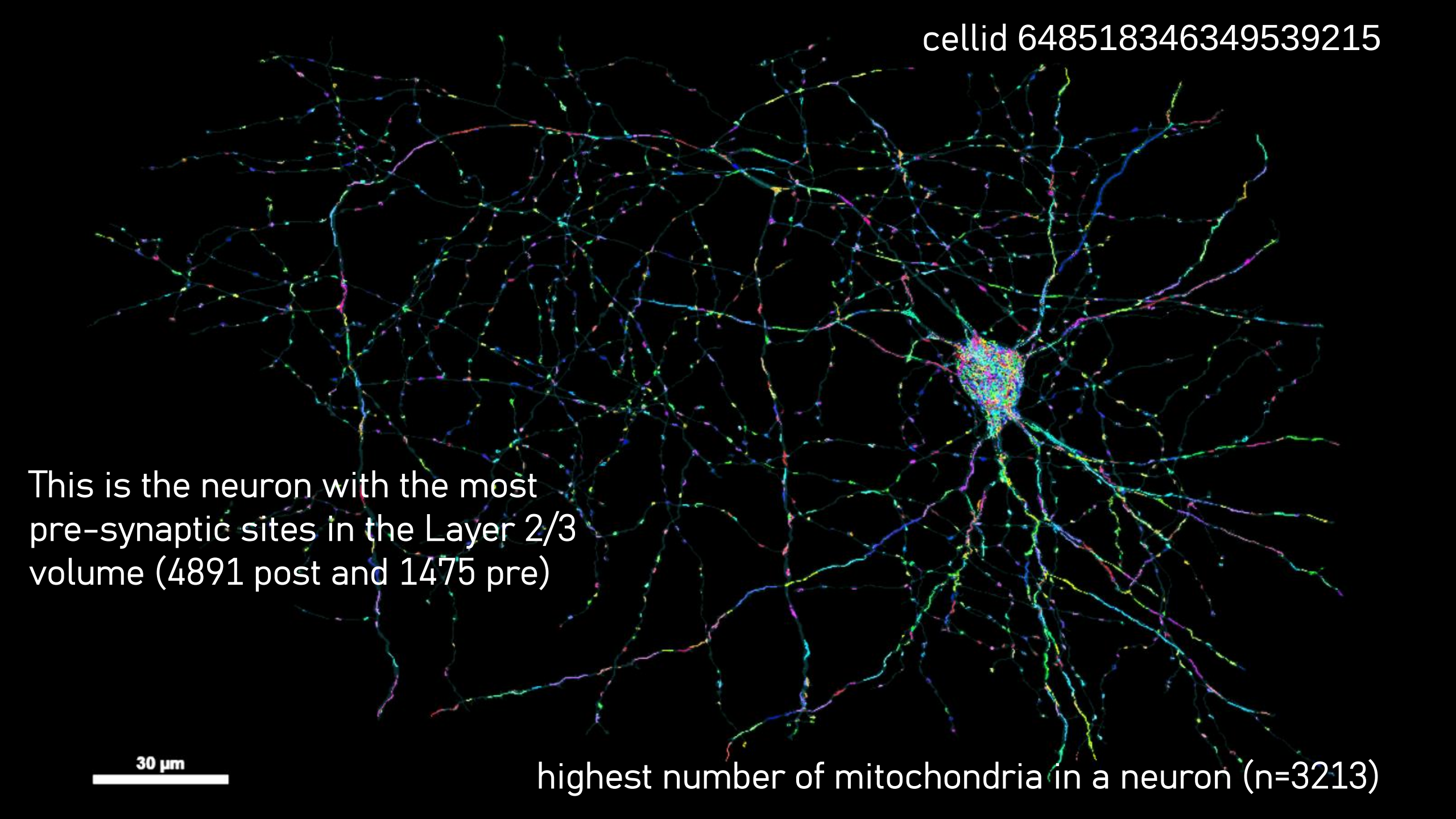
largest mitochondrion by voxels in an OPC glial cell (64851834634952554 5)

THE HIGHEST NUMBER OF MITOCHONDRION IN A CELL

Inhibitory basket neuron

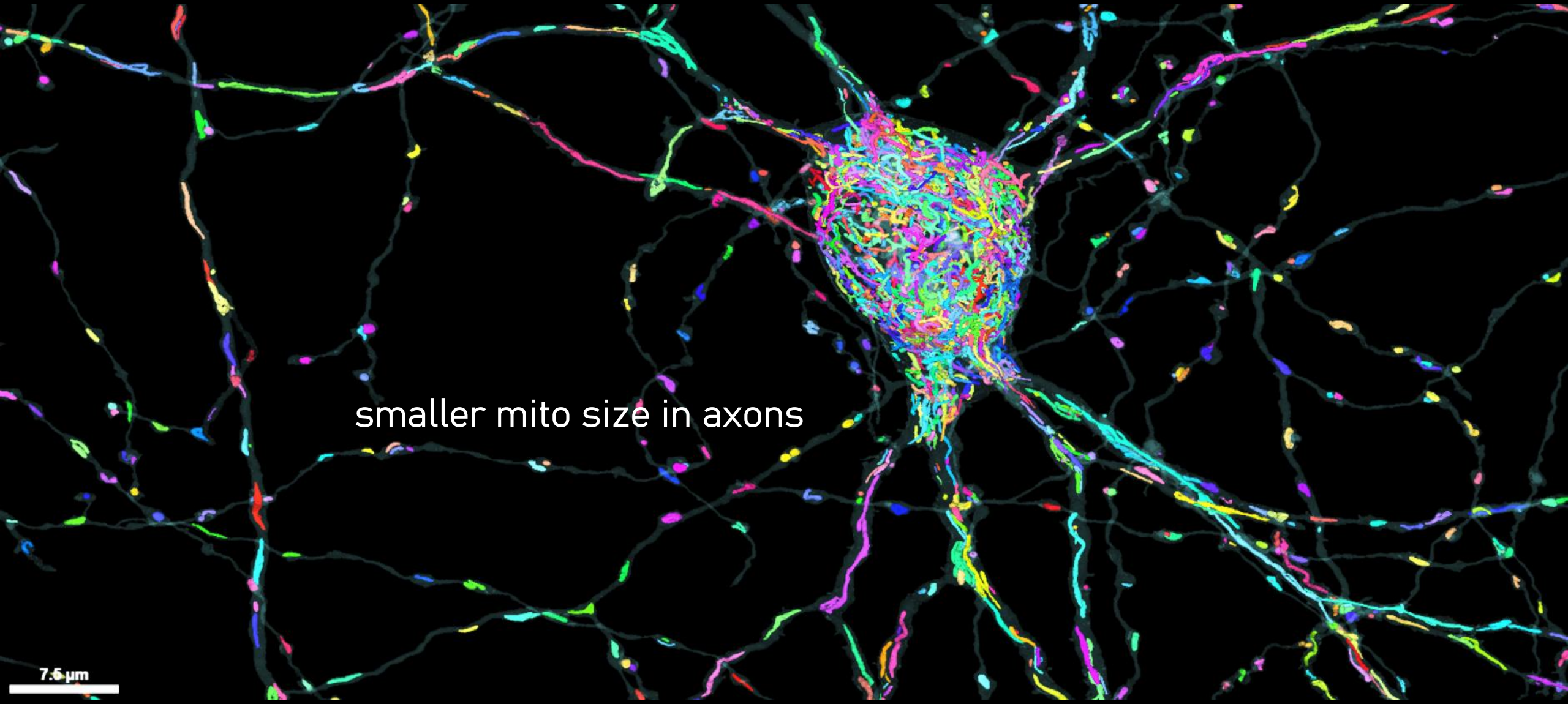
Cell id 648518346349539215

Mitochondria count n = 3213


cellid 648518346349539215
This is the neuron with the most pre-synaptic sites in the Layer 2/3 volume (4891 post and 1475 pre)
30 µm
highest number of mitochondria in a neuron (n=3213)

longer mito length in dendrites

cellid 648518346349539215

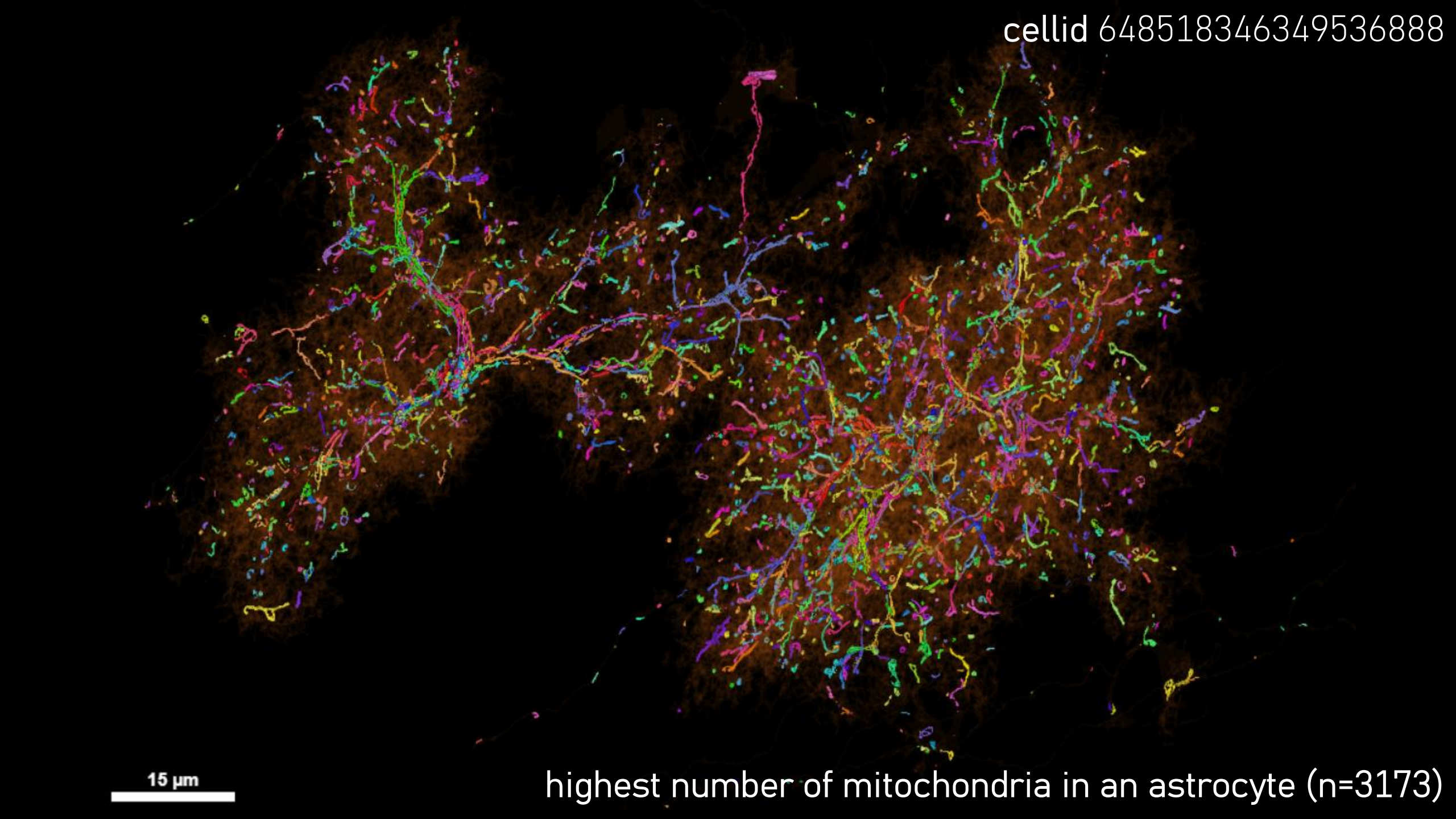


A HIGH NUMBER OF MITOCHONDRION IN A CELL

Astrocyte

Cell id 6485183463495368888

Mitochondria count n = 3173

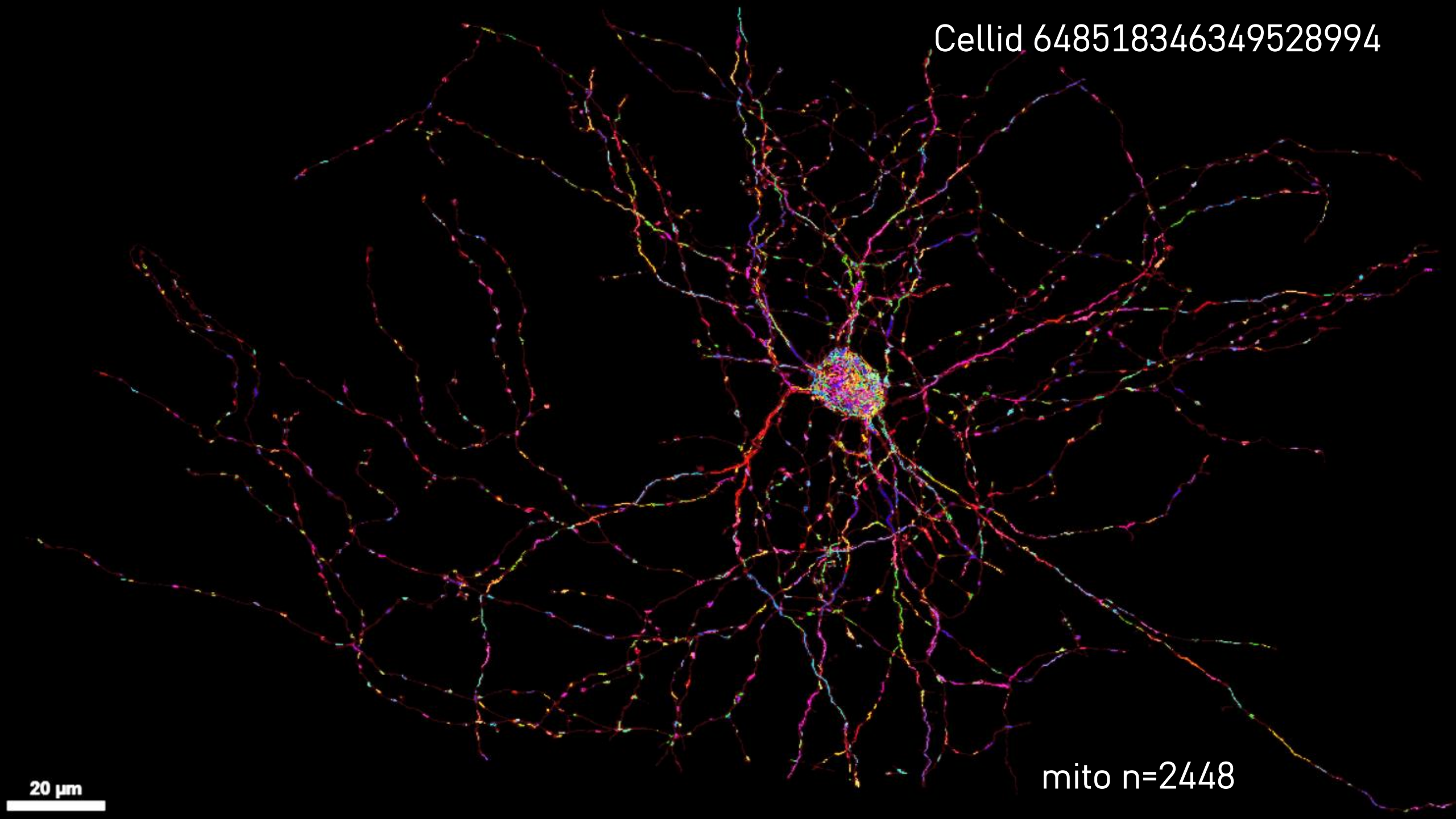

cellid 648518346349536888
15 µm
highest number of mitochondria in an astrocyte (n=3173)

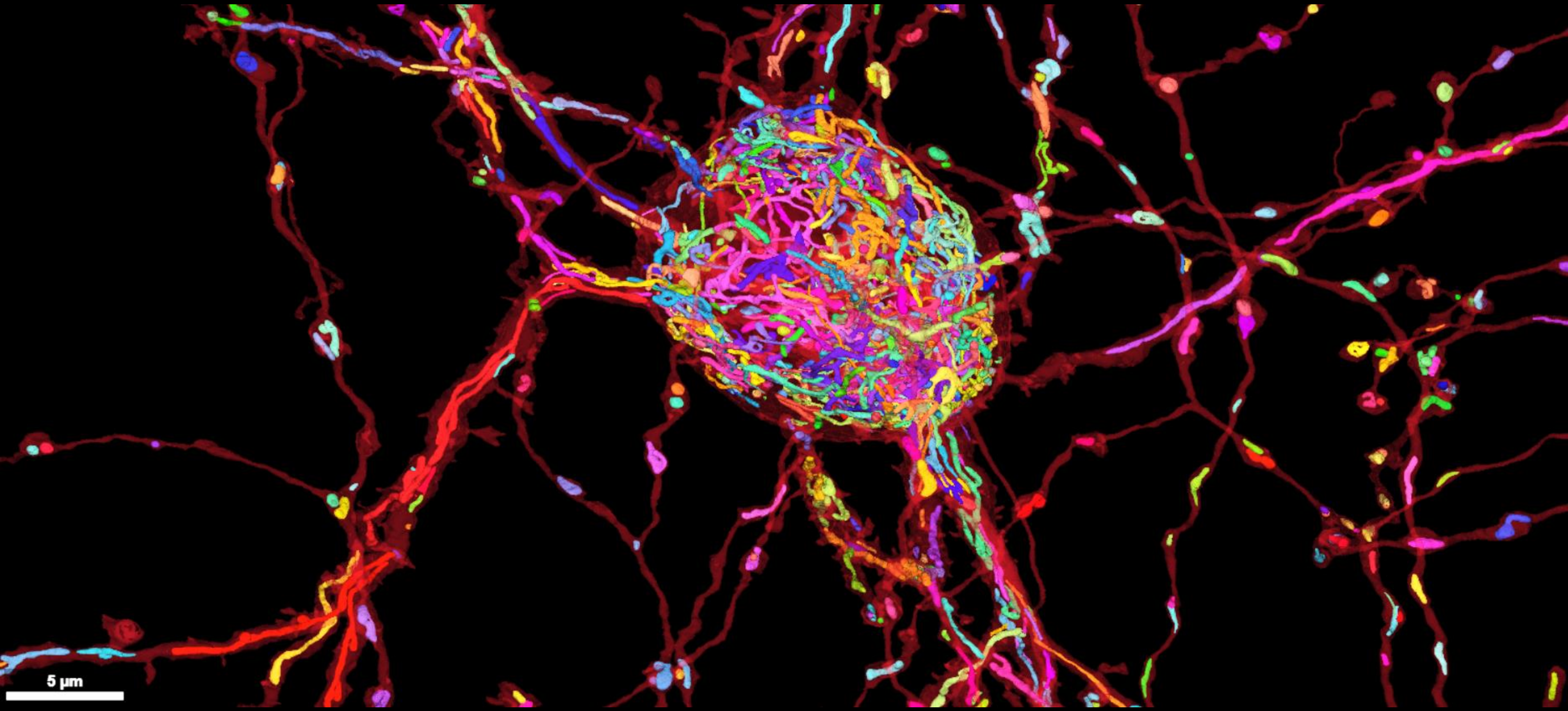
A HIGH NUMBER OF MITOCHONDRION IN A CELL

Inhibitory basket neuron

Cell id 648518346349528994

Mitochondria count n = 2448


Cellid 64851834634952899 4
mito n=2448
20 µm

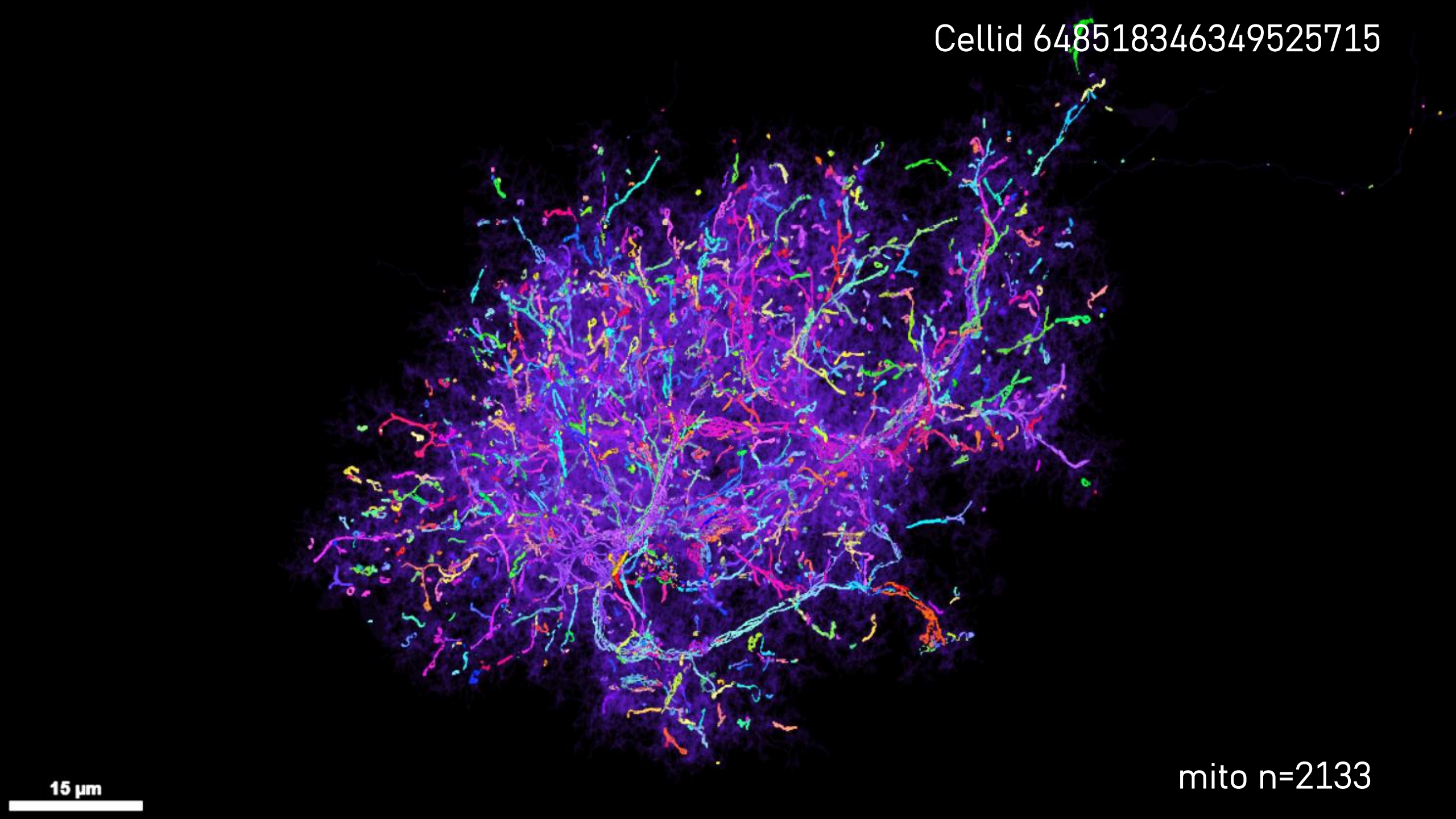

5 µm

A HIGH NUMBER OF MITOCHONDRION IN A CELL

Astrocyte

Cell id 6485183463495257l5

Mitochondria count n = 2133

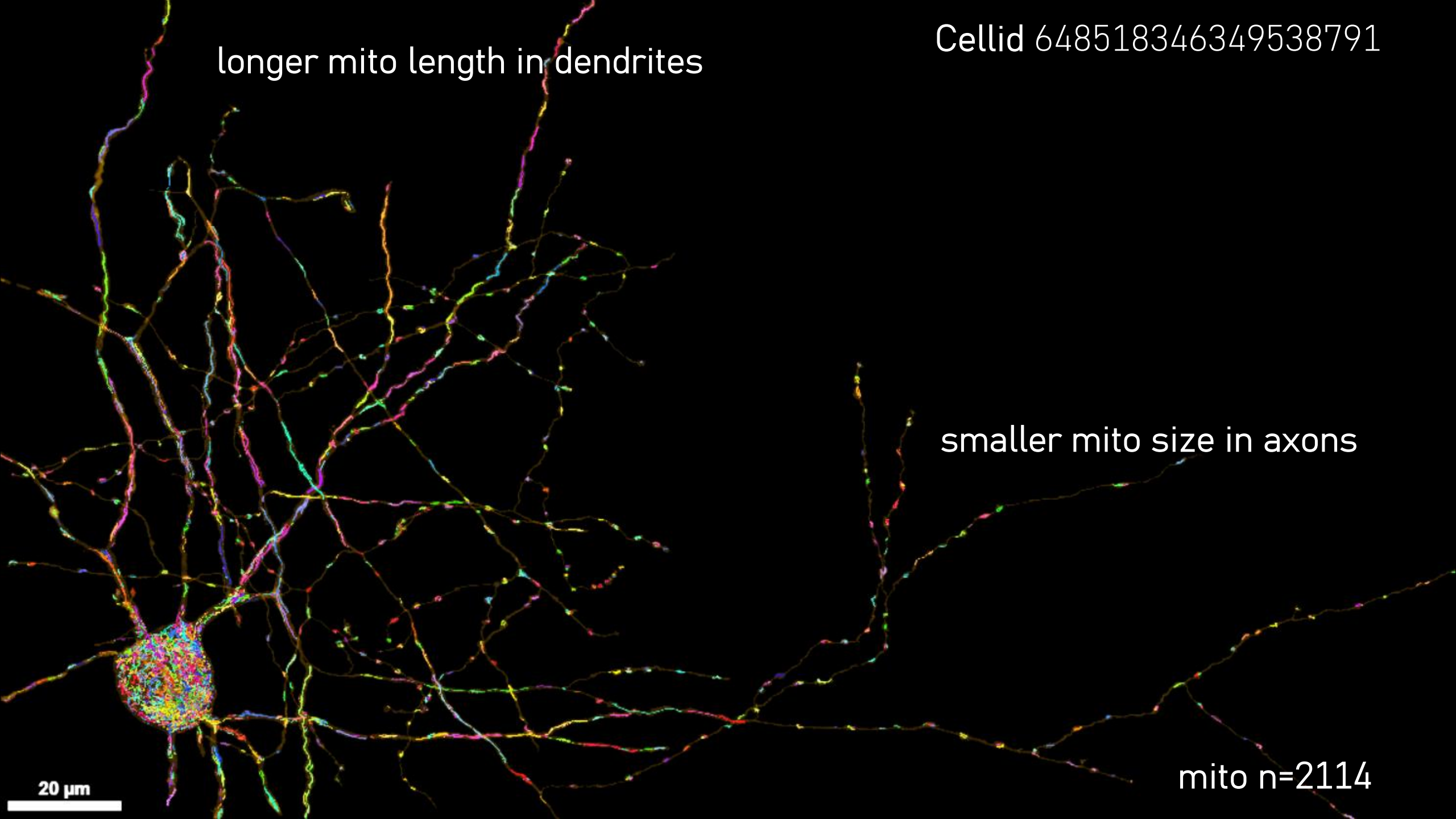

Cellid 648518346349525715
15 µm
mito n=2133

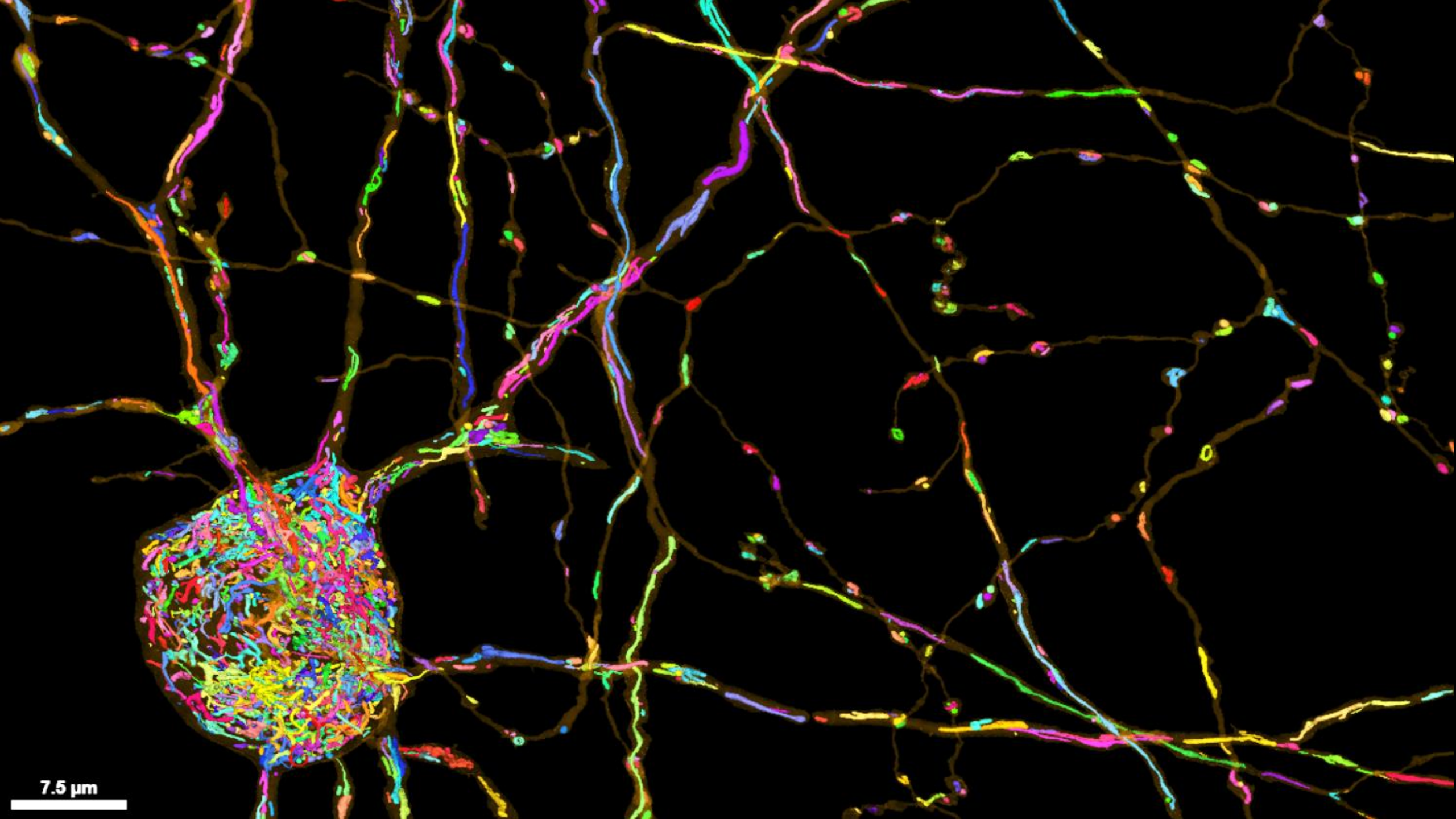
A HIGH NUMBER OF MITOCHONDRION IN A CELL

Inhibitory basket neuron

Cell id 648518346349538791

Mitochondria count n = 2114


longer mito length in dendrites
Cellid 648518346349538791
smaller mito size in axons
20 µm
mito n=2114

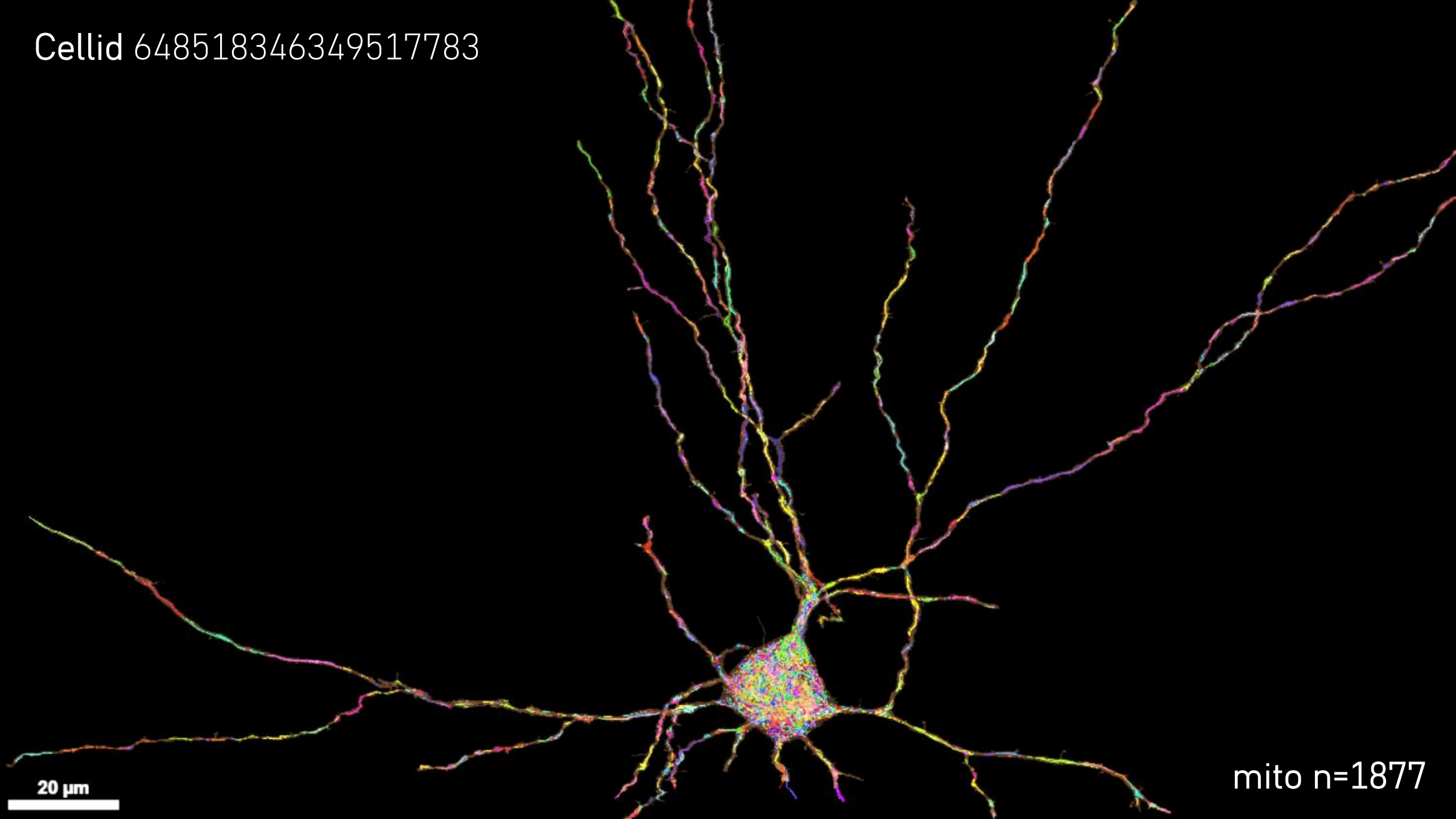

7.5 µm

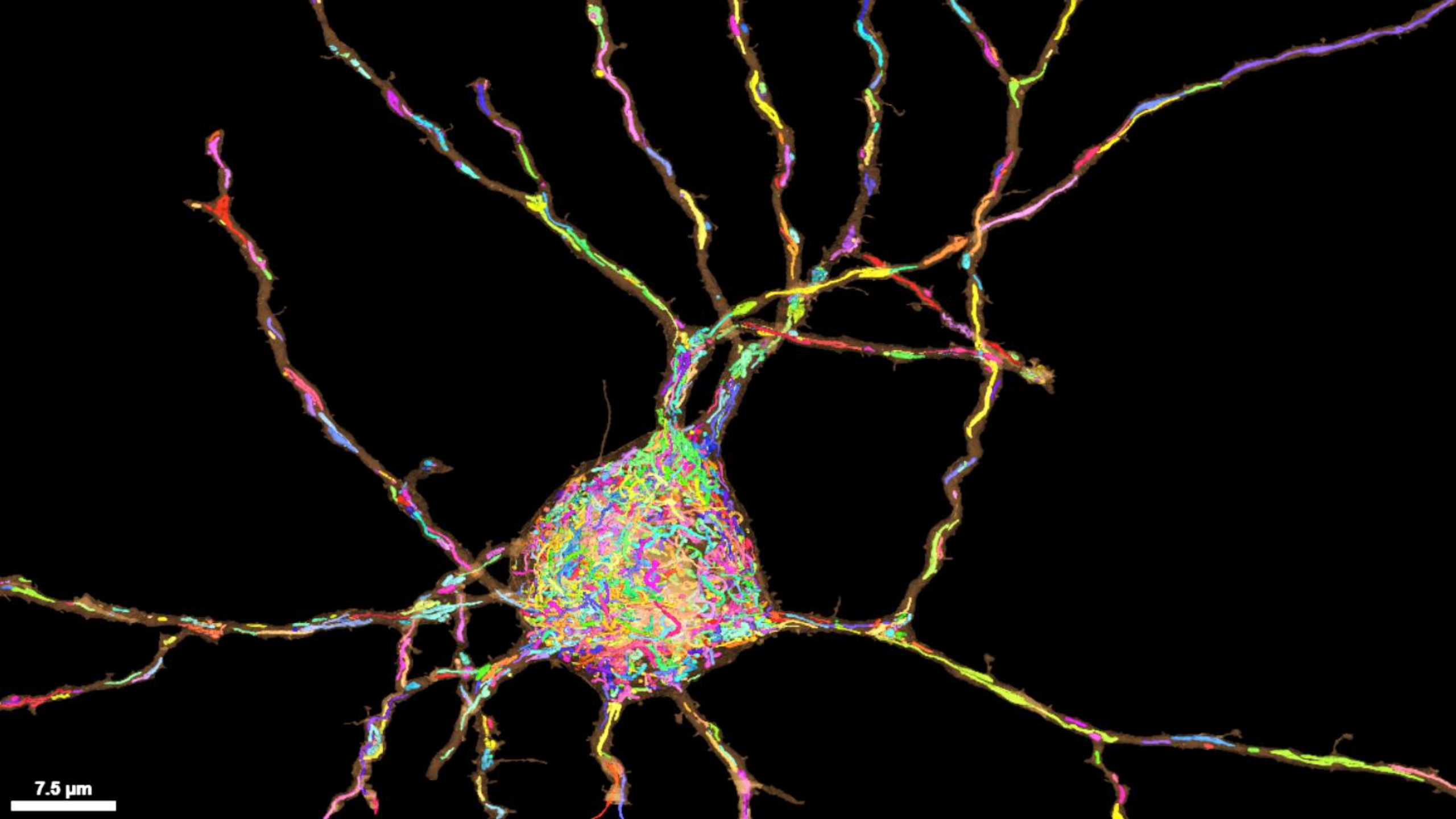
A HIGH NUMBER OF MITOCHONDRION IN A CELL

Inhibitory neuron of unknown type

Cell id 648518346349517783

Mitochondria count n = 1877


Cellid 648518346349517783
20 µm
mito n=1877

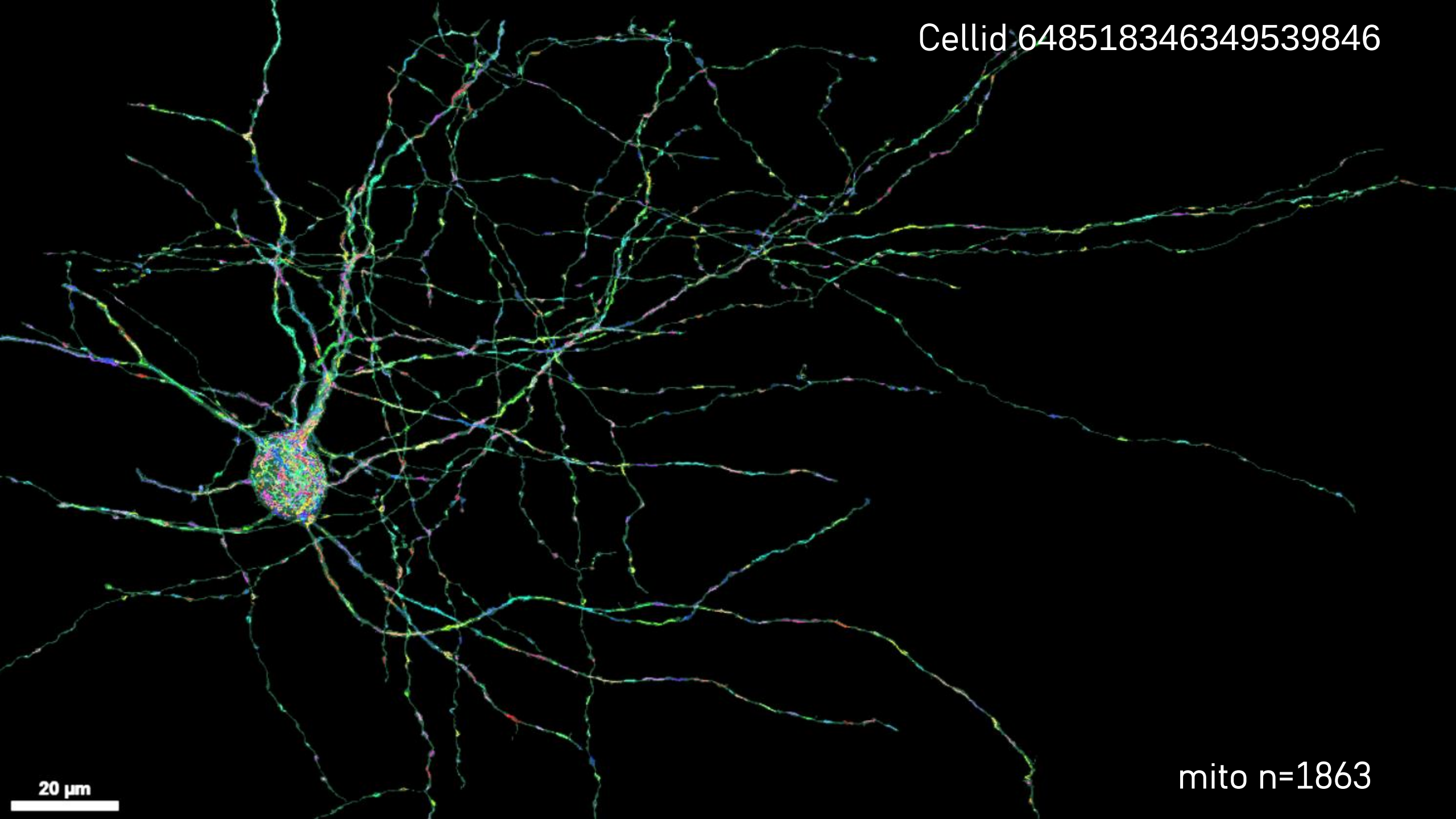

7.5 µm

A HIGH NUMBER OF MITOCHONDRION IN A CELL

Inhibitory basket neuron

Cell id 648518346349539846

Mitochondria count n = 1863


Cellid 648518346349539846
20 µm
mito n=1863

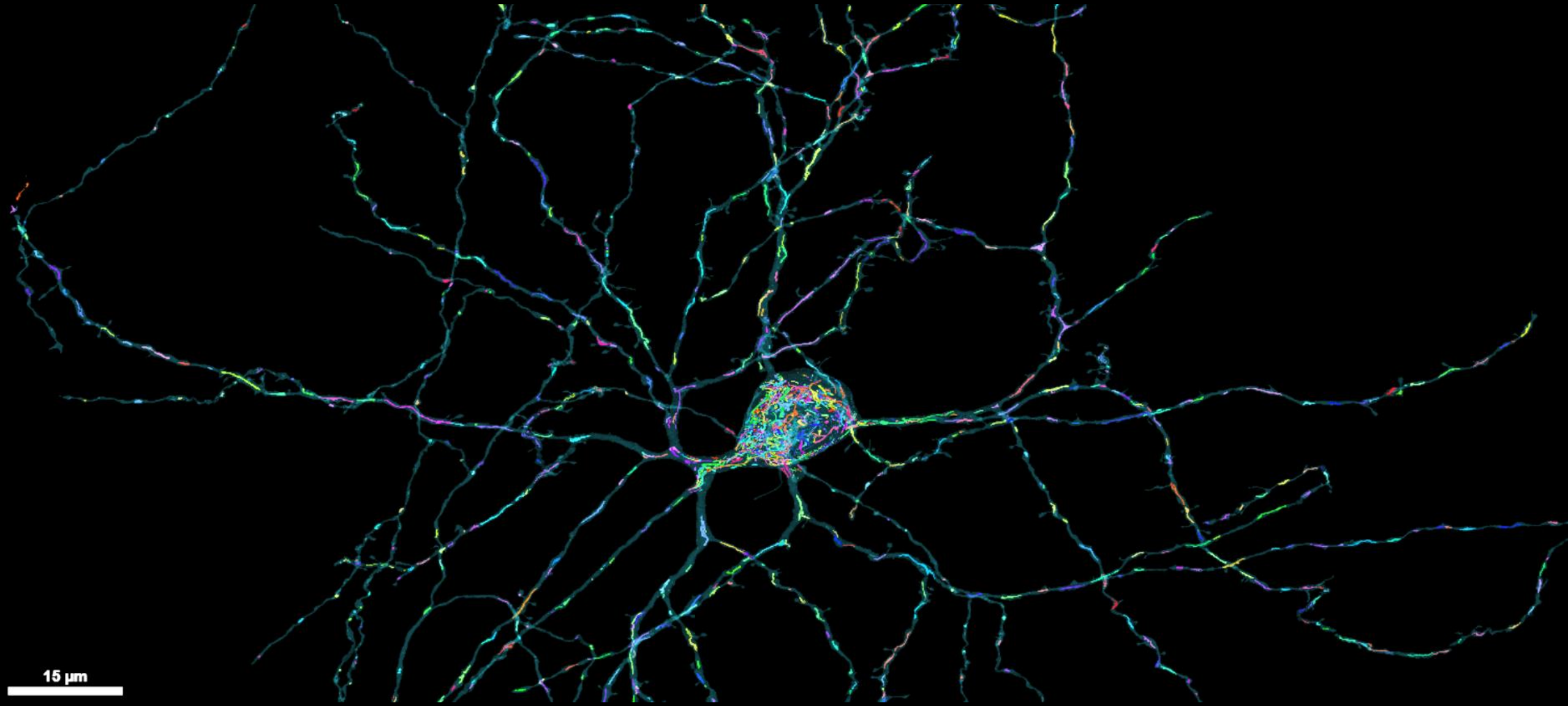
A HIGH NUMBER OF MITOCHONDRION IN A CELL

Inhibitory neurogliaform interneuron

Cell id 648518346349538789

Mitochondria count n = 1356

Cellid 648518346349538789



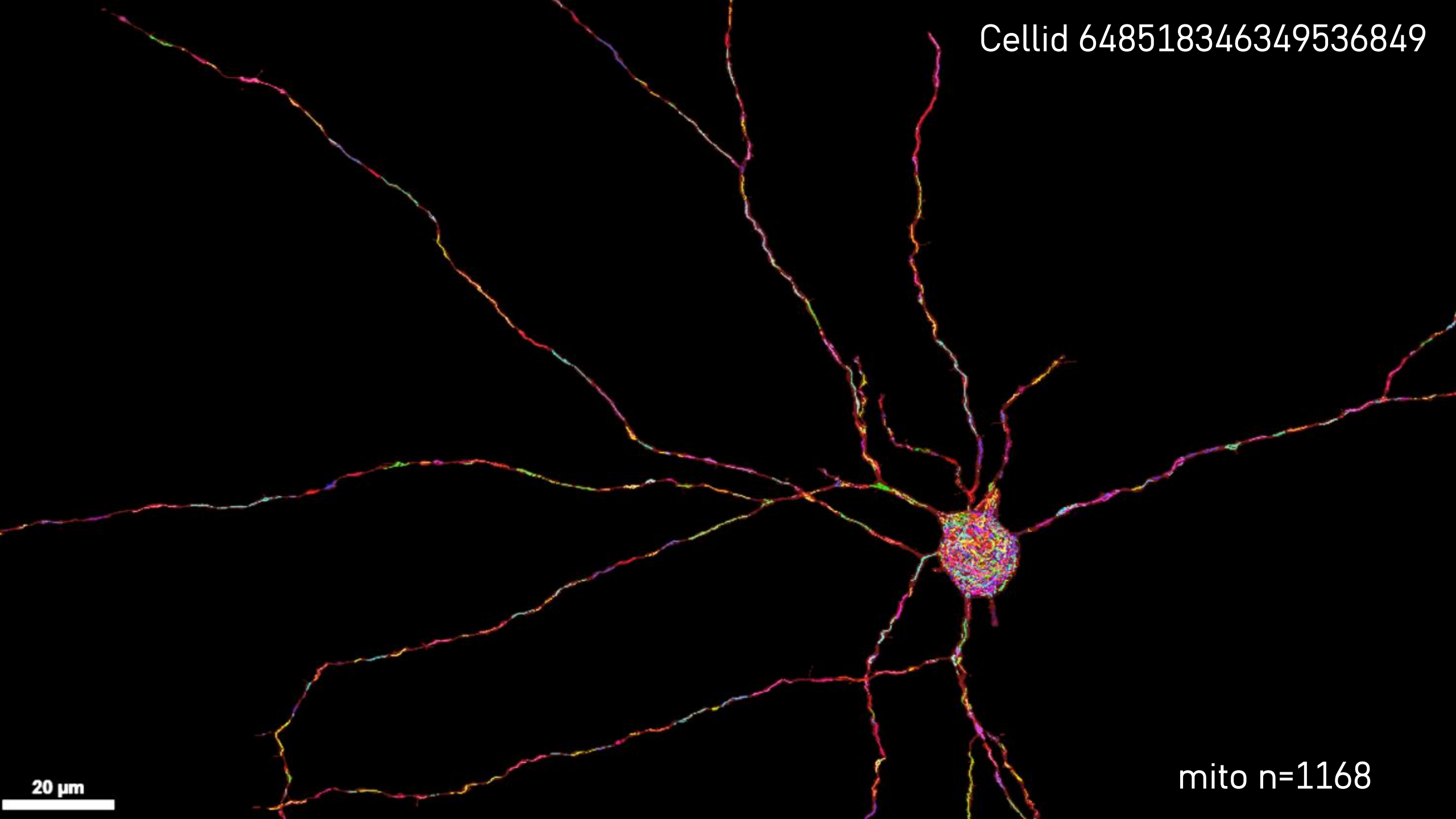
mito n=1356

A HIGH NUMBER OF MITOCHONDRION IN A CELL

Inhibitory neuron of unknown type

Cell id 648518346349536849

Mitochondria count n = 1168

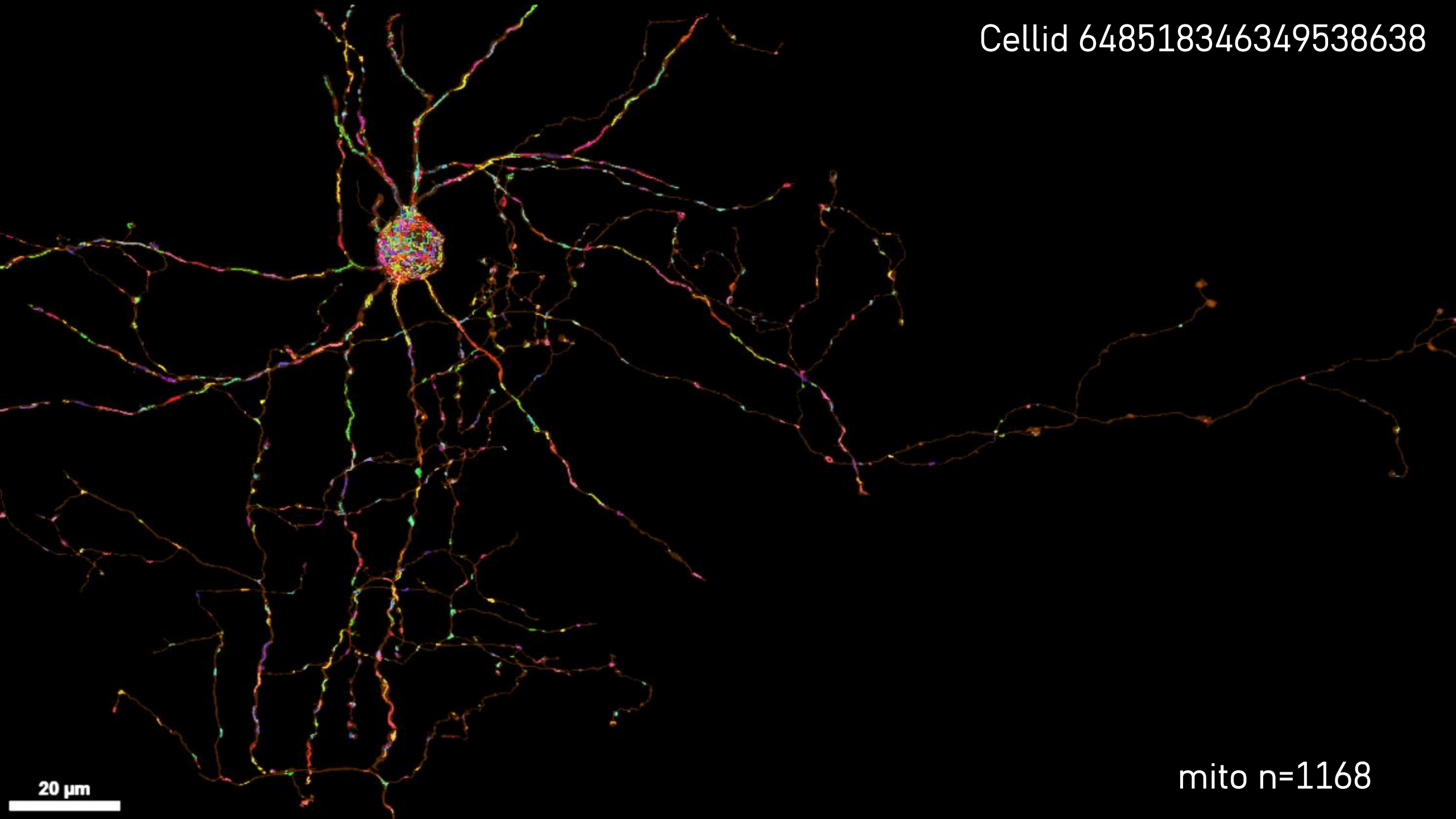

Cellid 648518346349536849
20 µm
mito n=1168

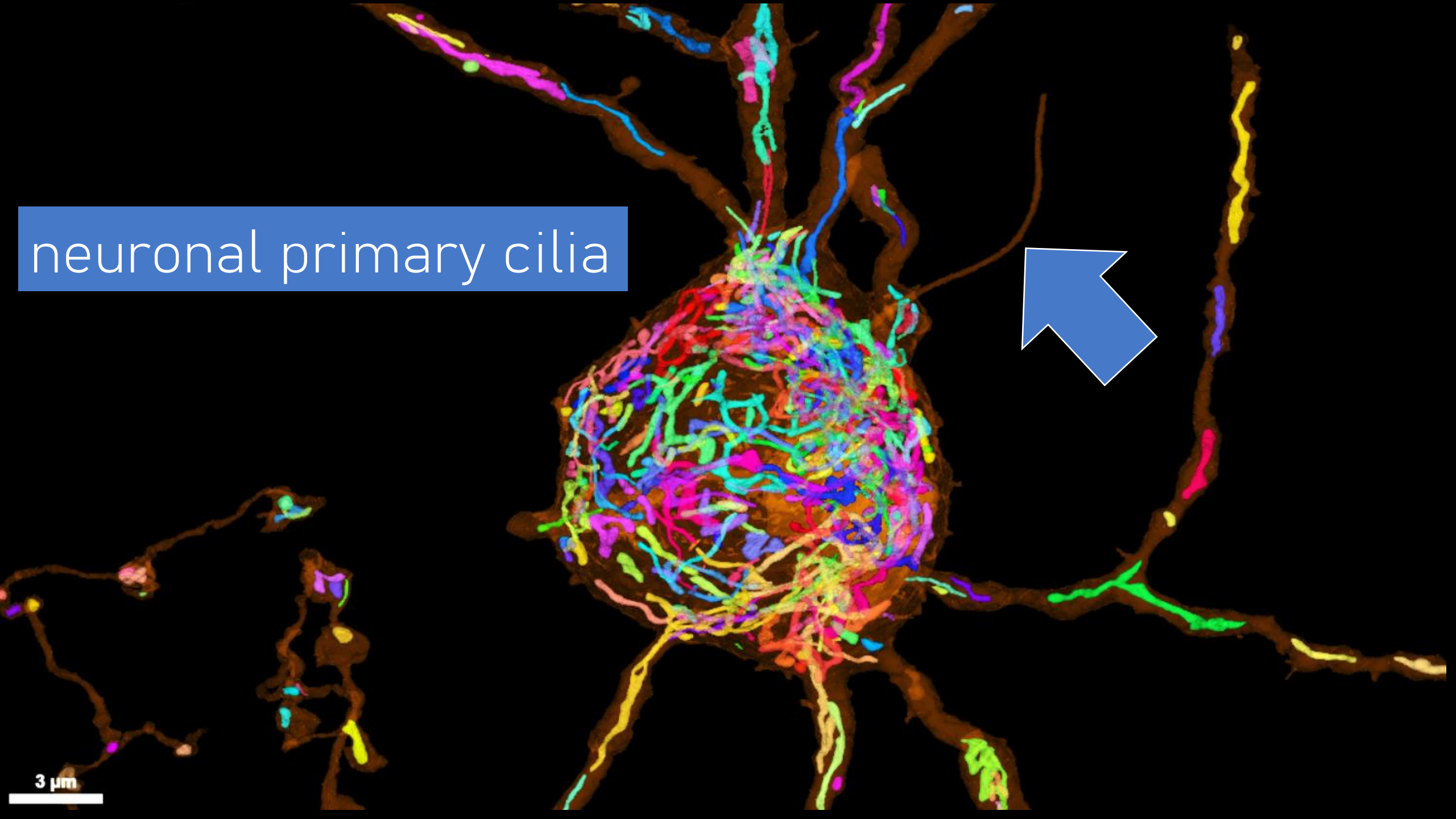
A HIGH NUMBER OF MITOCHONDRION IN A CELL

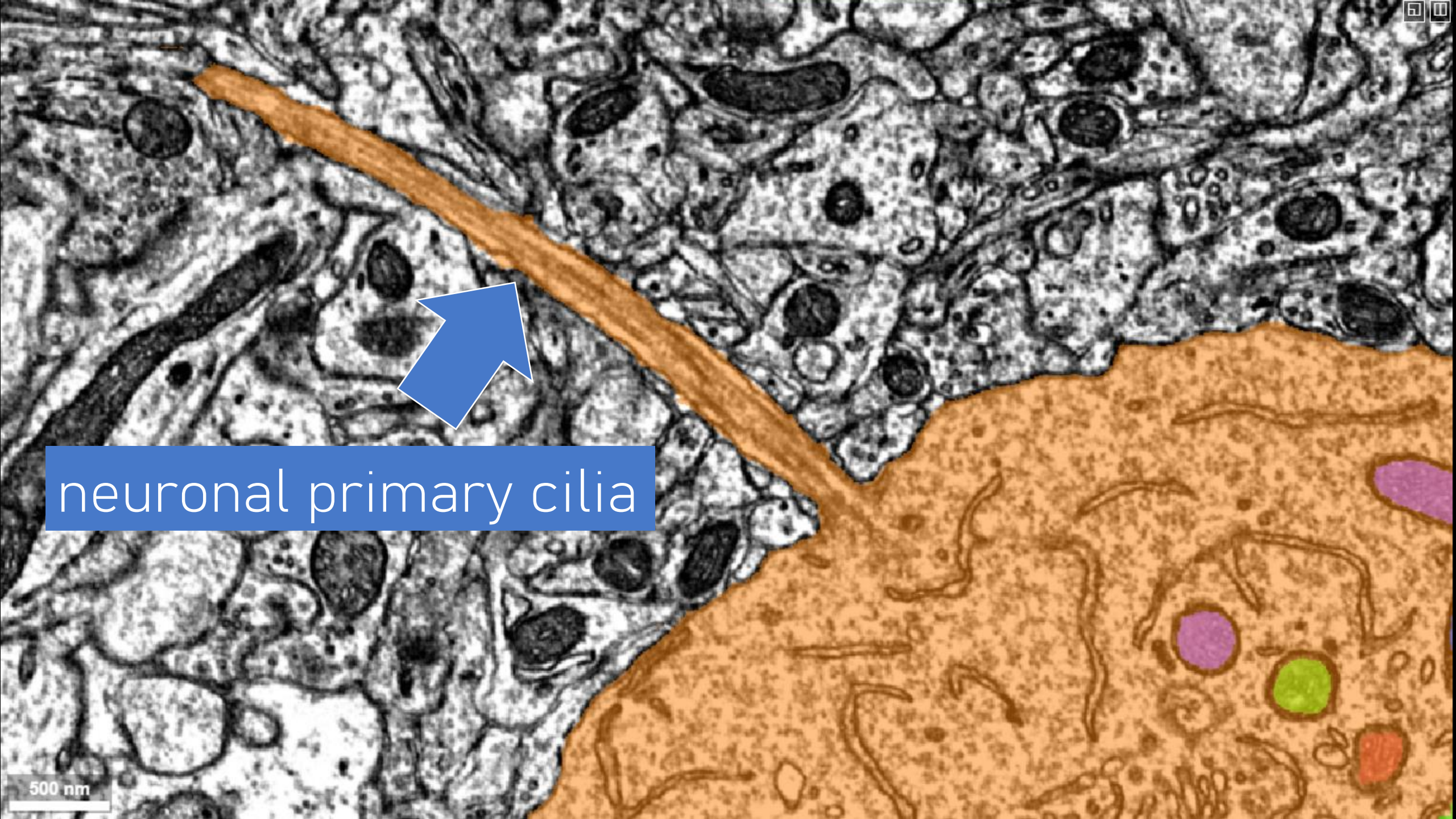
Inhibitory Chandelier neuron

Cell id 648518346349538638

Mitochondria count n = 1114


Cellid 648518346349538638
20 µm
mito n=1168


neuronal primary cilia
3 µm

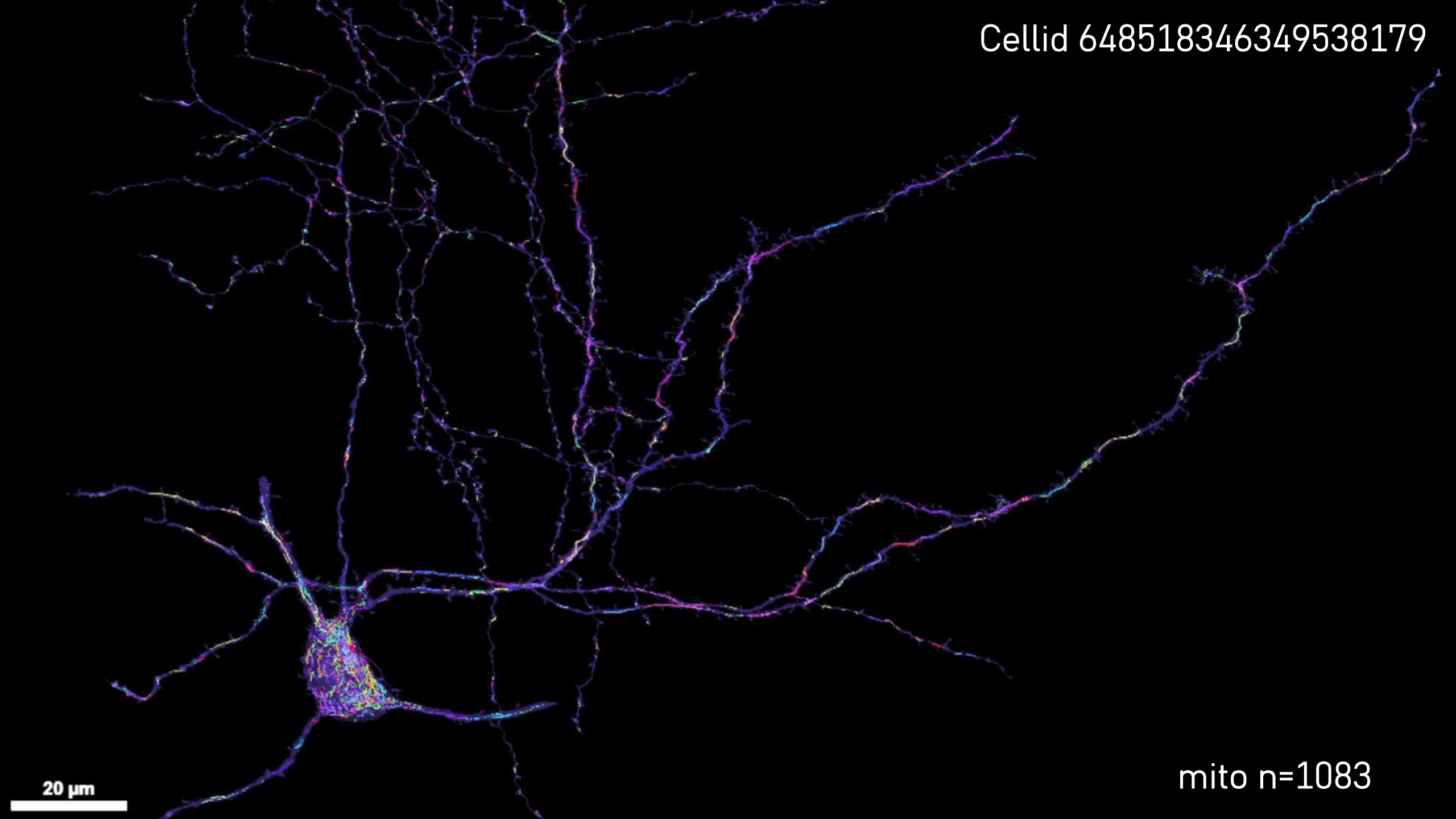

neuronal primary cilia
500 nm

A HIGH NUMBER OF MITOCHONDRION IN A CELL

Inhibitory Martinotti neuron

Cell id 648518346349538179

Mitochondria count n = 1083

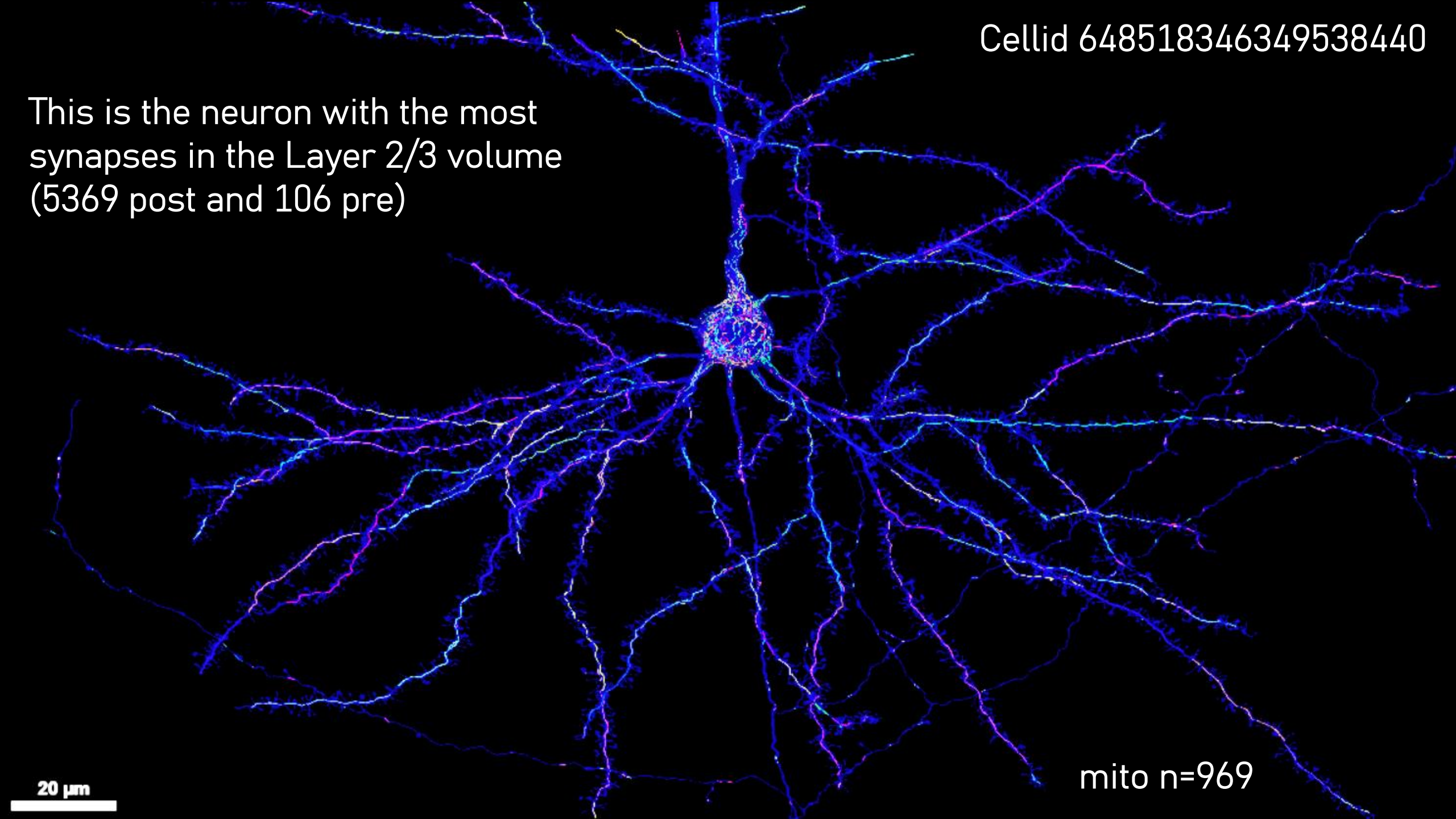

Cellid 648518346349538179
20 µm
mito n=1083

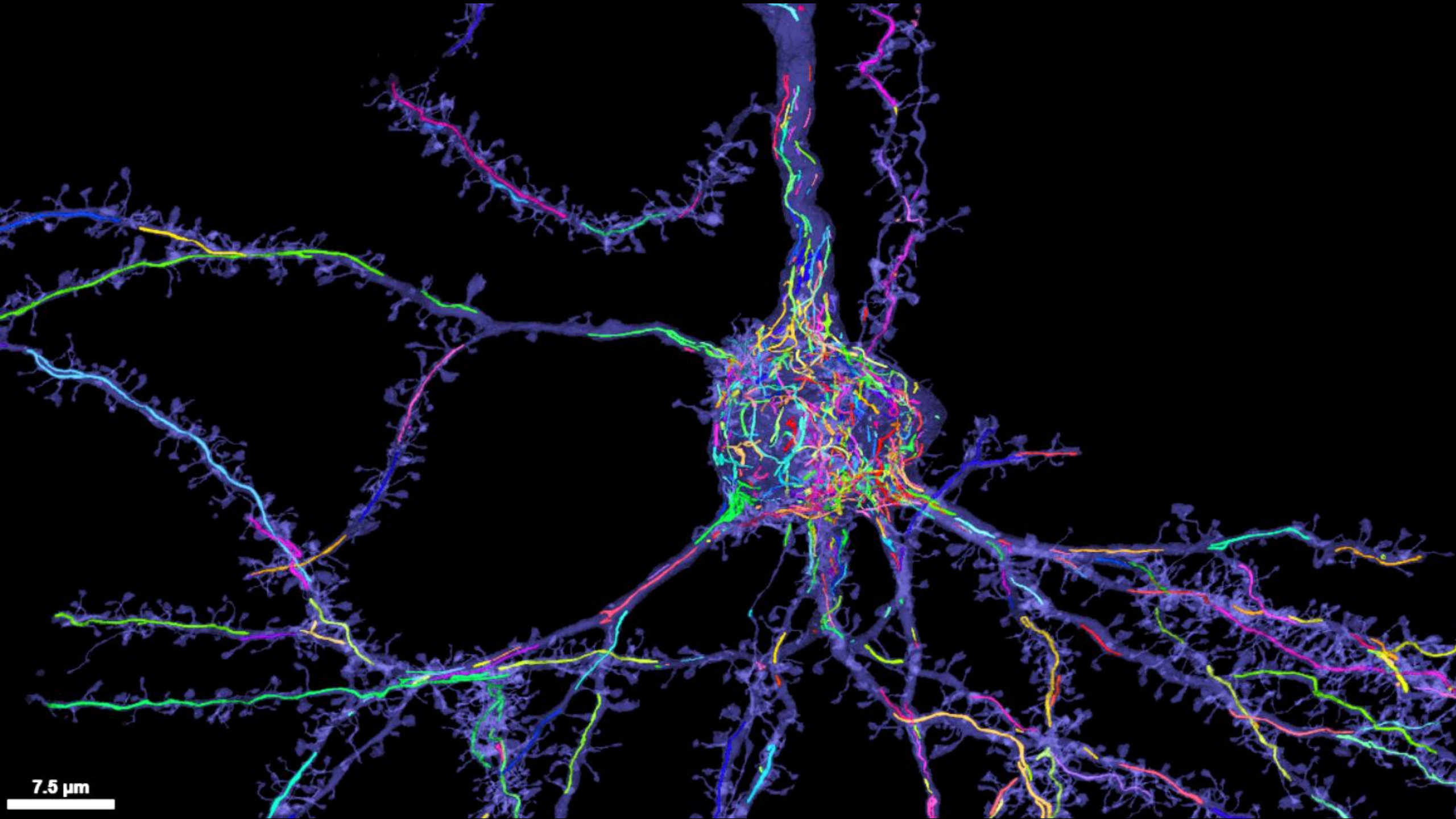
A HIGH NUMBER OF MITOCHONDRION IN A CELL

Excitatory pyramidal neuron

Cell id 648518346349538440

Mitochondria count n = 969


Cellid 648518346349538440
This is the neuron with the most synapses in the Layer 2/3 volume (5369 post and 106 pre)
20 µm
mito n=969

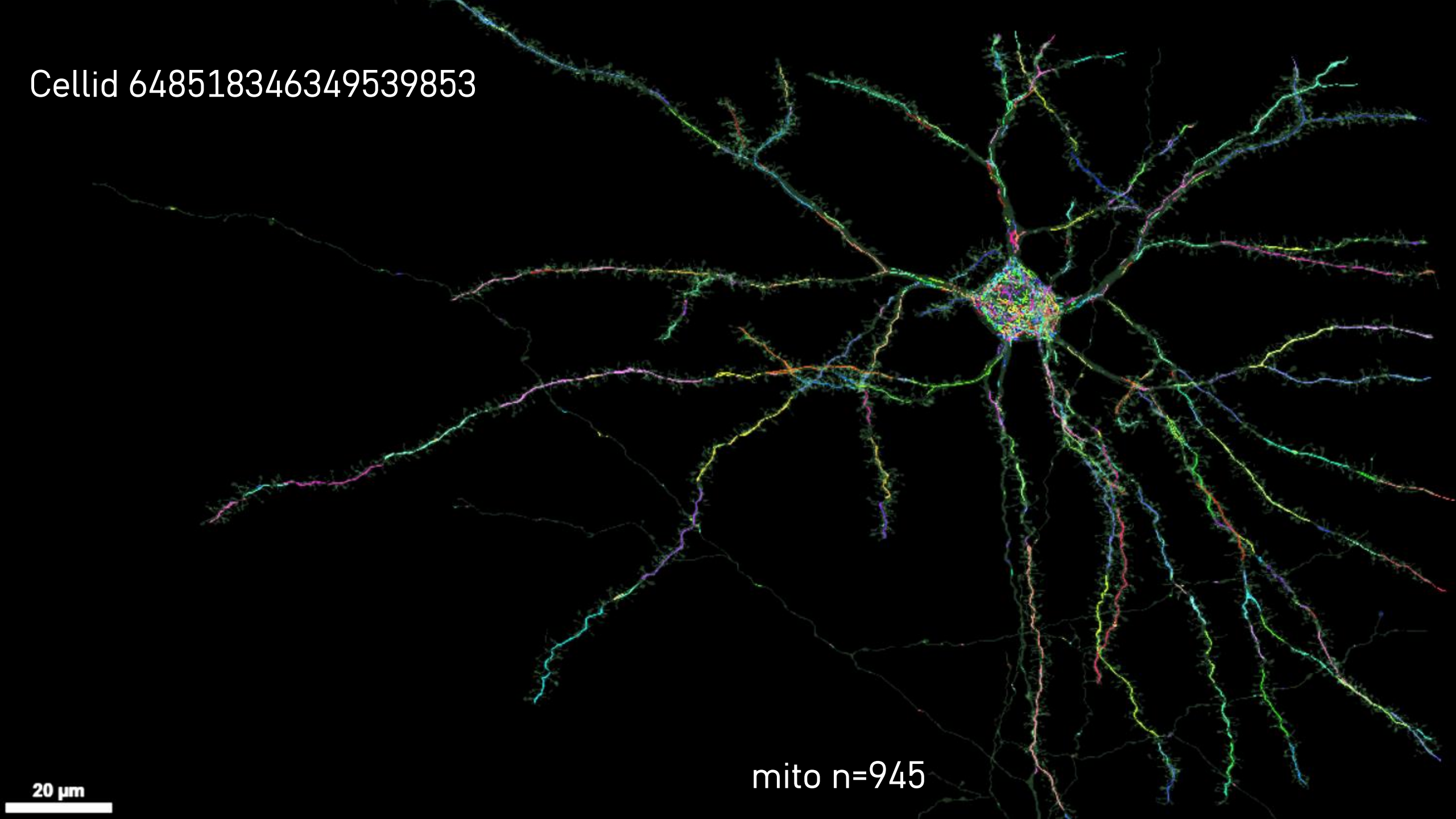

7.5 µm

A HIGH NUMBER OF MITOCHONDRION IN A CELL

Excitatory pyramidal neuron

Cell id 648518346349539853

Mitochondria count n = 945

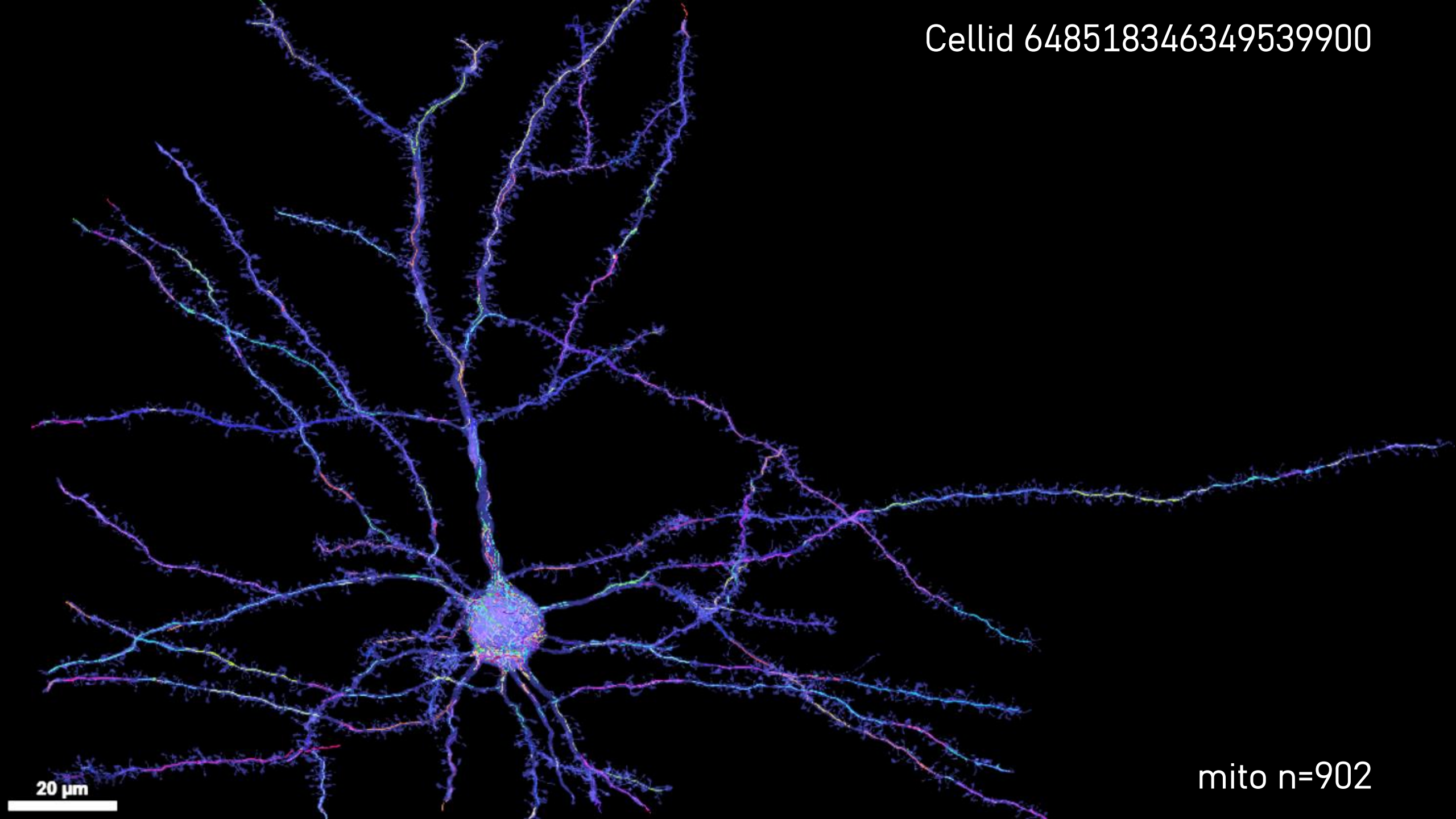

Cellid 648518346349539853
mito n=945
20 µm

A HIGH NUMBER OF MITOCHONDRION IN A CELL

Excitatory pyramidal neuron

Cell id 648518346349539900

Mitochondria count n = 902


Cellid 648518346349539900
20 µm
mito n=902

ACKNOWLEDGEMENTS

- Read the original research papers on the Citation page at Allen Institute
- Read the Terms and Conditions page

CODE AVAILABILITY

- Visit my GitHub repository to view how the images and data in this presentation were generated