

Supplementary material 2. Summary of Students' Research Topics

Summary of Population Comparison by Student Groups:

- Aspiny vs Spiny: 5 groups
- Neurons from patients with epilepsy vs tumor: 6 groups
- Neurons from different layers: 1 group
- Neurons of different cell types: 2 groups

List of individual neurons and neuronal populations selected for comparison by student groups

Single	Population
Neurons from patient with tumor vs patient with epilepsy	1. Neurons from patient with tumor vs neurons from patient with epilepsy 2. Spiny vs Aspiny
<ul style="list-style-type: none"> • a spiny neuron from layer 3 of the frontal lobe of an individual with tumorigenesis • an aspiny neuron from layer 3 of the middle temporal gyrus of an individual with epilepsy 	Spiny vs. aspiny neurons from patients with epilepsy
spiny (Layer 5) and aspiny (Layer 2/3) neurons in the primary visual cortex in mice	Spiny vs aspiny neurons
<ul style="list-style-type: none"> • Cell 1 was taken from the middle frontal gyrus • Cell 2 was taken from the middle temporal gyrus. 	Neurons from patients with tumor vs neurons from patient with epilepsy
<ul style="list-style-type: none"> • A 23-year-old epileptic female neuron, • a 35-year-old epileptic male neuron • a 52-year-old male tumor neuron. 	1. Neurons from human with tumor or epileptic, 2. GABAergic, cholinergic, and VIP-containing neurons.
<ul style="list-style-type: none"> • The first neuron we studied was located in layer 1 of the primary visual area (VISp) in the cerebral cortex, from a <i>Ndnf-IRES2-dgCre</i> mouse • The second neuron we studied was located in layer 5 of the primary visual area from a <i>Scnn1a-Tg3-Cre</i> mouse 	Spiny and aspiny neurons
Neurons from MTG region donated by tumor or epilepsy patient	MTG brain cells from tumor patients turned and from epilepsy patients
<ul style="list-style-type: none"> • aspiny neuron from the layer 6a of the postrhinal area in the right hemisphere of the brain (Cell #1) • a sparsely-spiny neuron from the same mouse line was examined from layer 6a of the primary visual area in the left hemisphere (Cell #2). 	Spiny and aspiny neurons
<ul style="list-style-type: none"> • This neuron is from a 27-year-old female with tumors. The neuron is from layer 3 of Inferior Frontal Gyrus (IFG) on the right hemisphere. It has an intact spiny dendrite. • Second neuron is from a 23-year-old female with epilepsy. The neuron is at layer 2 of medial temporal gyrus (MTG) on the left hemisphere. It has an intact spiny dendrite. 	Neurons from patients with tumor vs neurons from patient with epilepsy
<ul style="list-style-type: none"> • Human Black Female 34 yr, MTG, Layer 5, spiny, epilepsy • Human Hispanic Female 24 yr, MTG, Layer 5, spiny, epilepsy • Human White Female 28 yr, MTG, Layer 5, spiny, epilepsy 	MTG Layer 3, MTG Layer 4, and MTG Layer 5 neurons of humans with epilepsy

<ul style="list-style-type: none">• A sparsely spiny neuron from the middle temporal gyrus (MTG) area in the right hemisphere of a male 18-year-old epilepsy patient• A spiny neuron in the frontal lobe (FroL) area in the right hemisphere of a 25-year-old male epilepsy patient• An aspiny neuron from the MTG area in the left hemisphere of a 38-year-old female epilepsy patient	Three populations of interneurons in mice: PV, SST, and VIP interneurons
<ul style="list-style-type: none">• The first neuron came from a 52-year-old male patient with a brain tumor• The second came from a 60-year-old female patient with intractable epilepsy (18 years of seizure history)	Human cells with epilepsy vs tumors from the first layer of the middle temporal gyrus