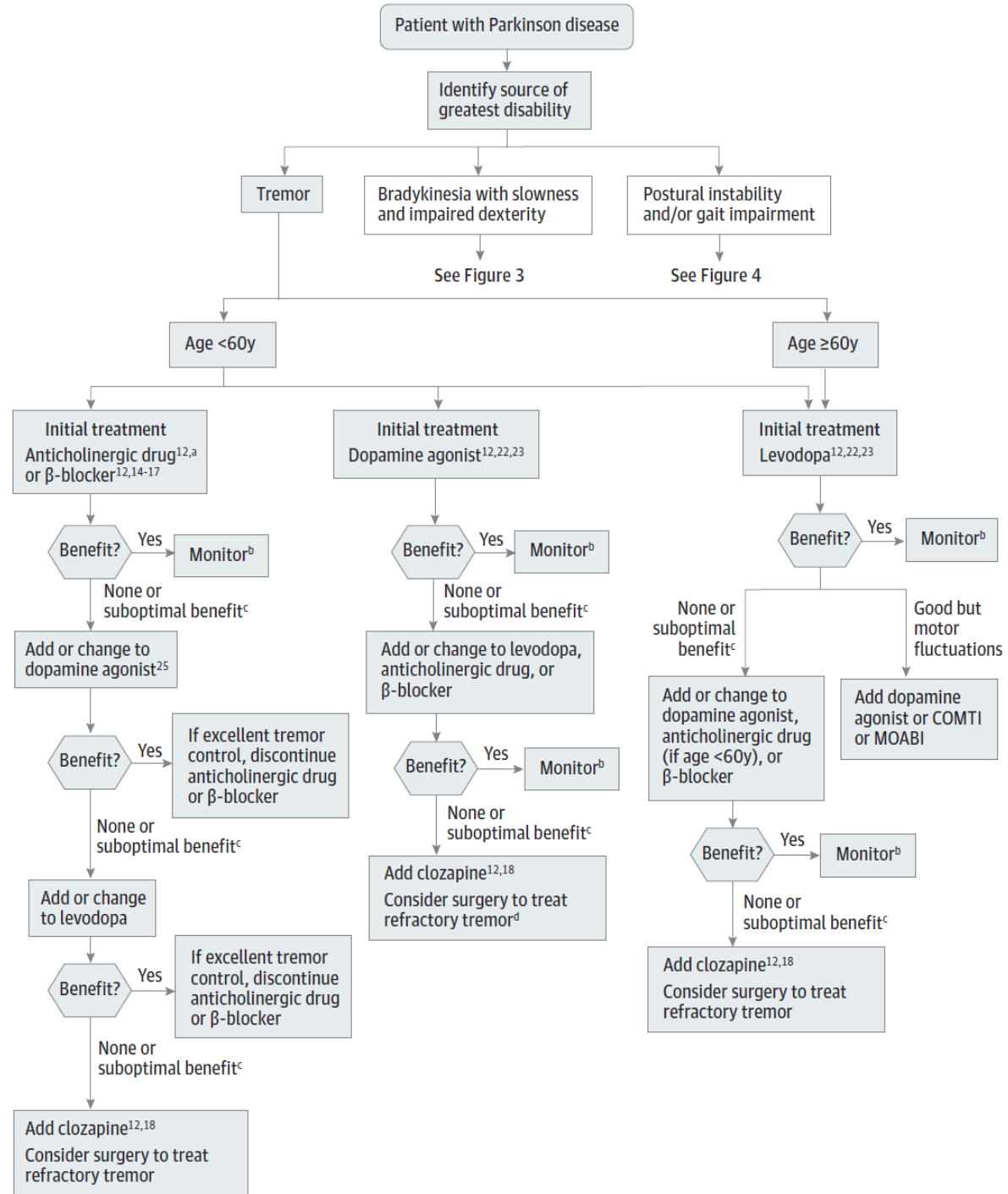
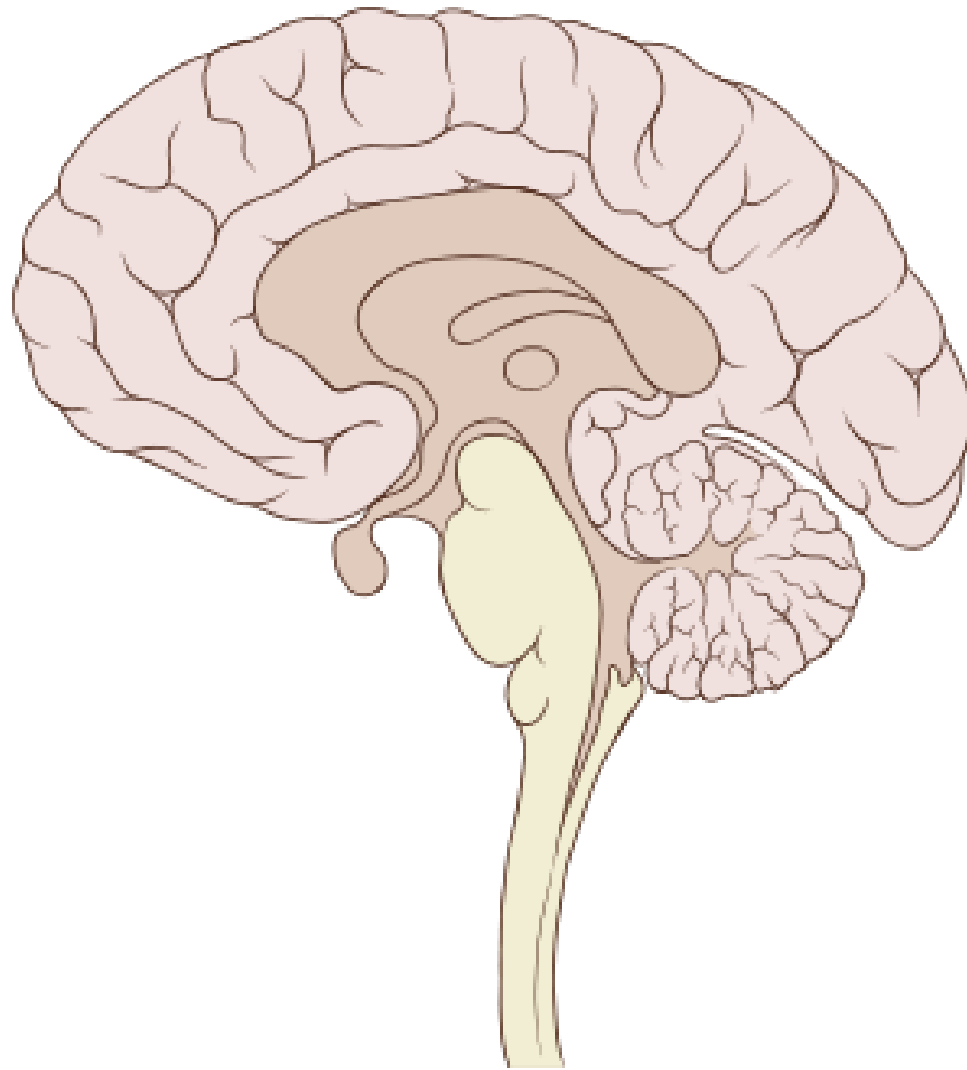




Parkinson's

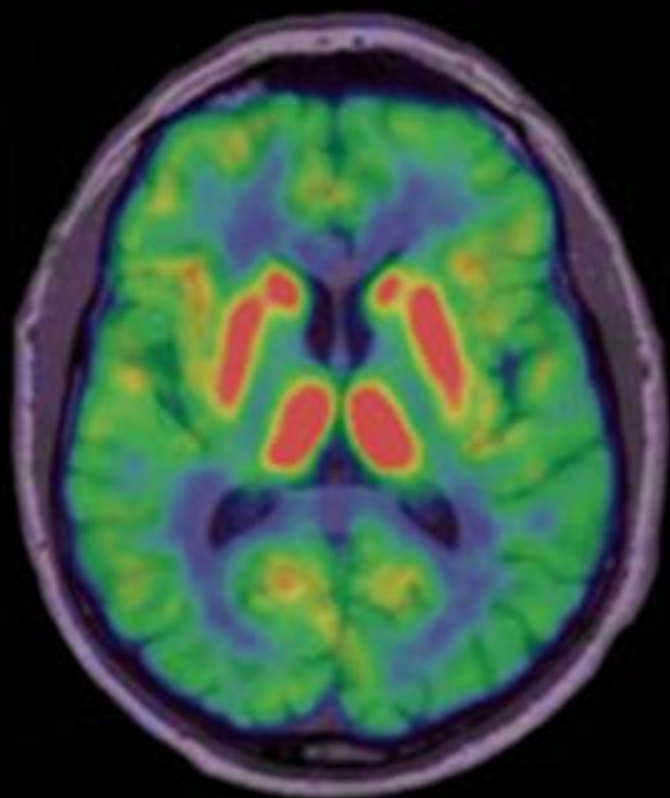
- Common neurodegenerative disorder ~10-20/1000
- Expected increase of 25-30% in next 25 yrs
- Complex condition which changes with time
- Motor system-fine balance of inhibitory and excitatory inputs of basal ganglia and cerebellum
- Apoptosis of dopaminergic neurons in substantia nigra-leads to decrease in inhibition
- Disruption of signals to motor cortex via thalamus
- Smooth, coordinated movement is lost
- Genetic linkage, Up to 20% have a relative affected
- 30-50% have depressive symptoms
- No cure but treatments to increase dopamine levels



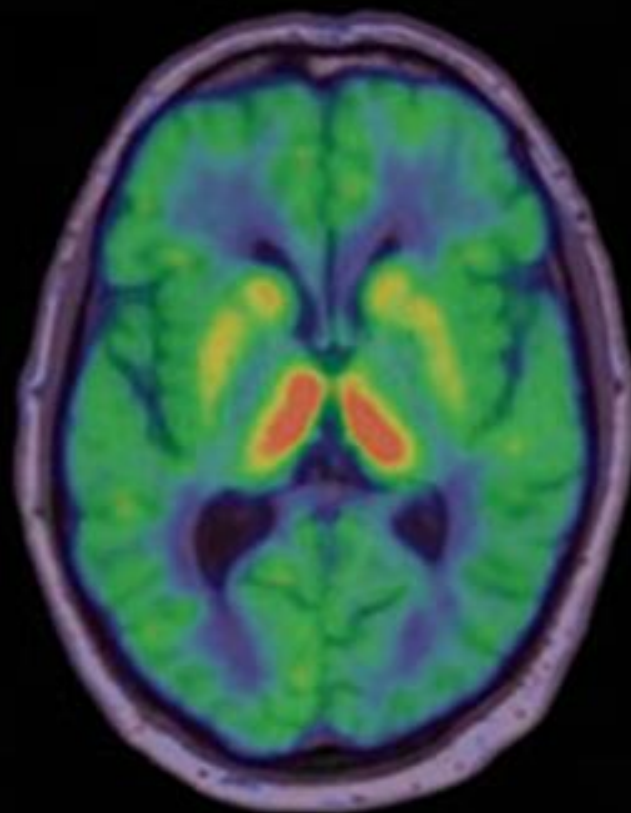


Team Workshop 1: Locate (BRAIN MAP) and label the substantia nigra? Why does damage to this area affect motor coordination?

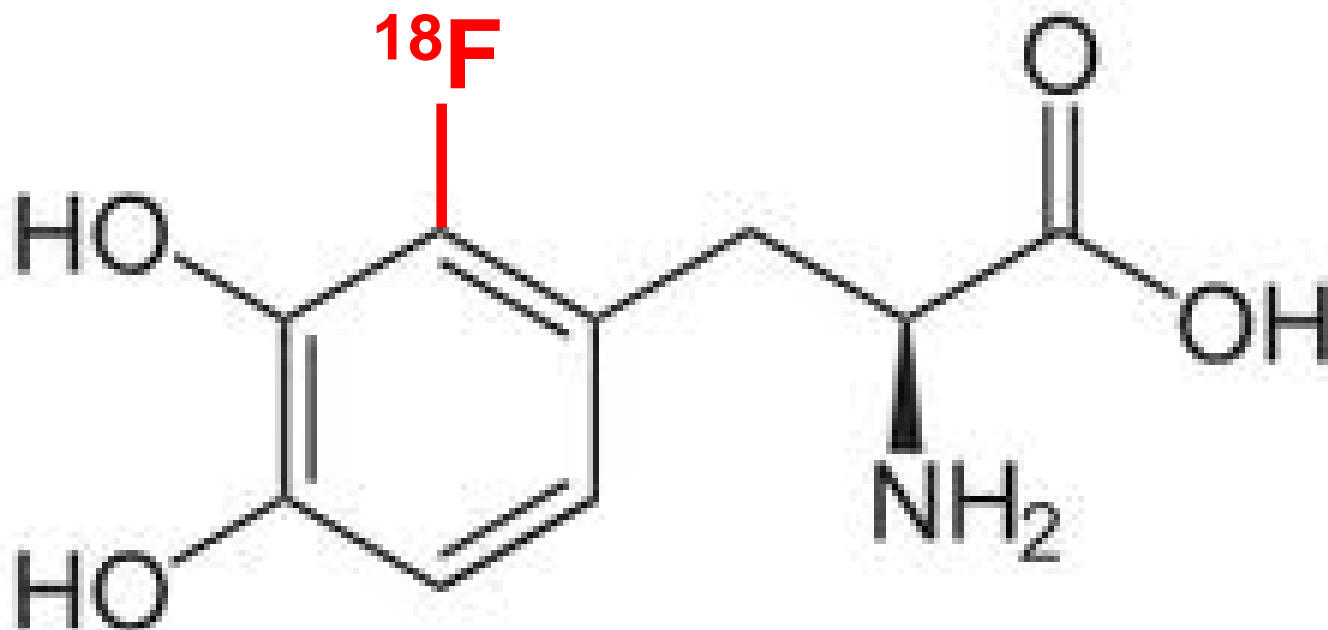
Healthy Brain



Parkinson's Brain



LOW  HIGH



Team Workshop 2: Draw the form of L-Dopa used for PET scan determination of Parkinson's. Why is this form used?



Structure:

- gray matter (GM)
- telencephalon (Tel)
- cerebral cortex (Cx)
- temporal lobe (TL)
- inferior temporal gyrus (ITG)

Gene Info:

Symbol: SYP
Name: synaptophysin
Probe: CUST_14348_P1416261804
Expression - z-score: 0.716407, log2 intensity: 8.16828
Related Data: MOUSE HUMAN

Donor:

- H0351.1009, 57 yrs, M, White or Caucasian

Brain Explorer

Find Correlates

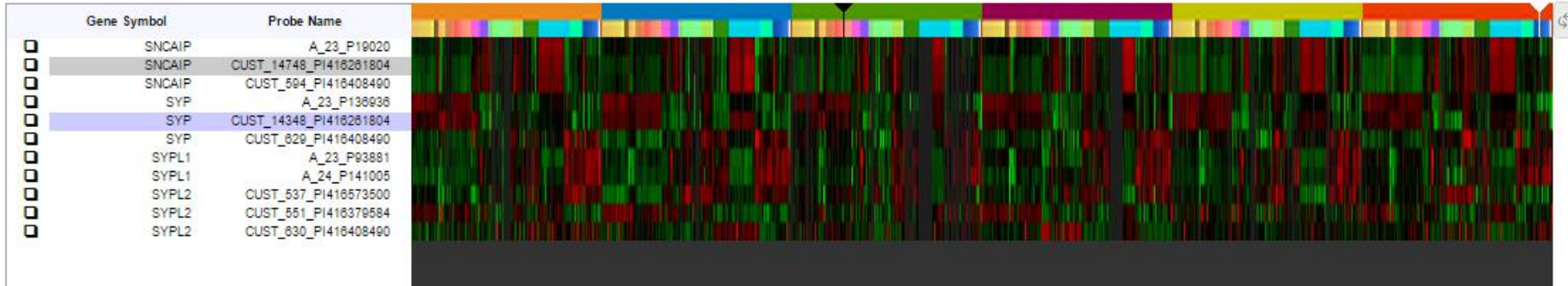
In:

For: [All Donors] ▼

For this probe:
CUST_14348_P1416261804

1 - 11 of 11

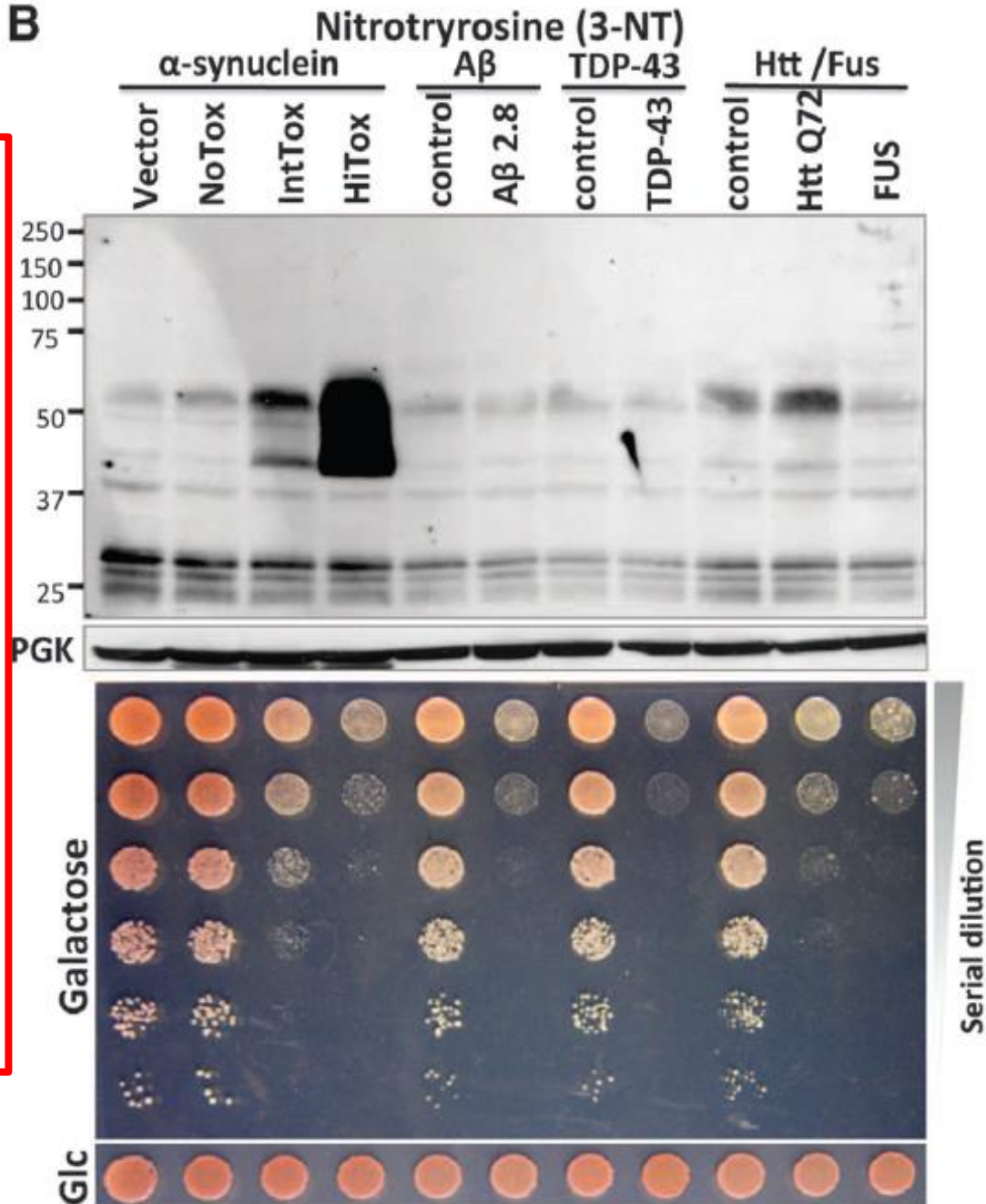
Donor H0351.2001 anterior orbital gyrus (ACrG)



Team Workshop 3: Determine the most abundant type of dopamine receptor. Use the BRAIN ATLAS to explore where this receptor is most highly expressed in the human brain and where it is the least expressed. What can you conclude about receptor location and Parkinson's. What about alpha-synuclein?



B



Team Workshop 4:
Amyloid has been reported to cause nitrosylation of a variety of proteins. Find other proteins reported to be nitrosylated in the presence of amyloid. What form of amyloid did they use in this experiment? Is this a good model to compare against α -synuclein?



Remember

- Before 12 PM of the next class day:
 - go to b.socrative.com/student/login and complete the quiz