

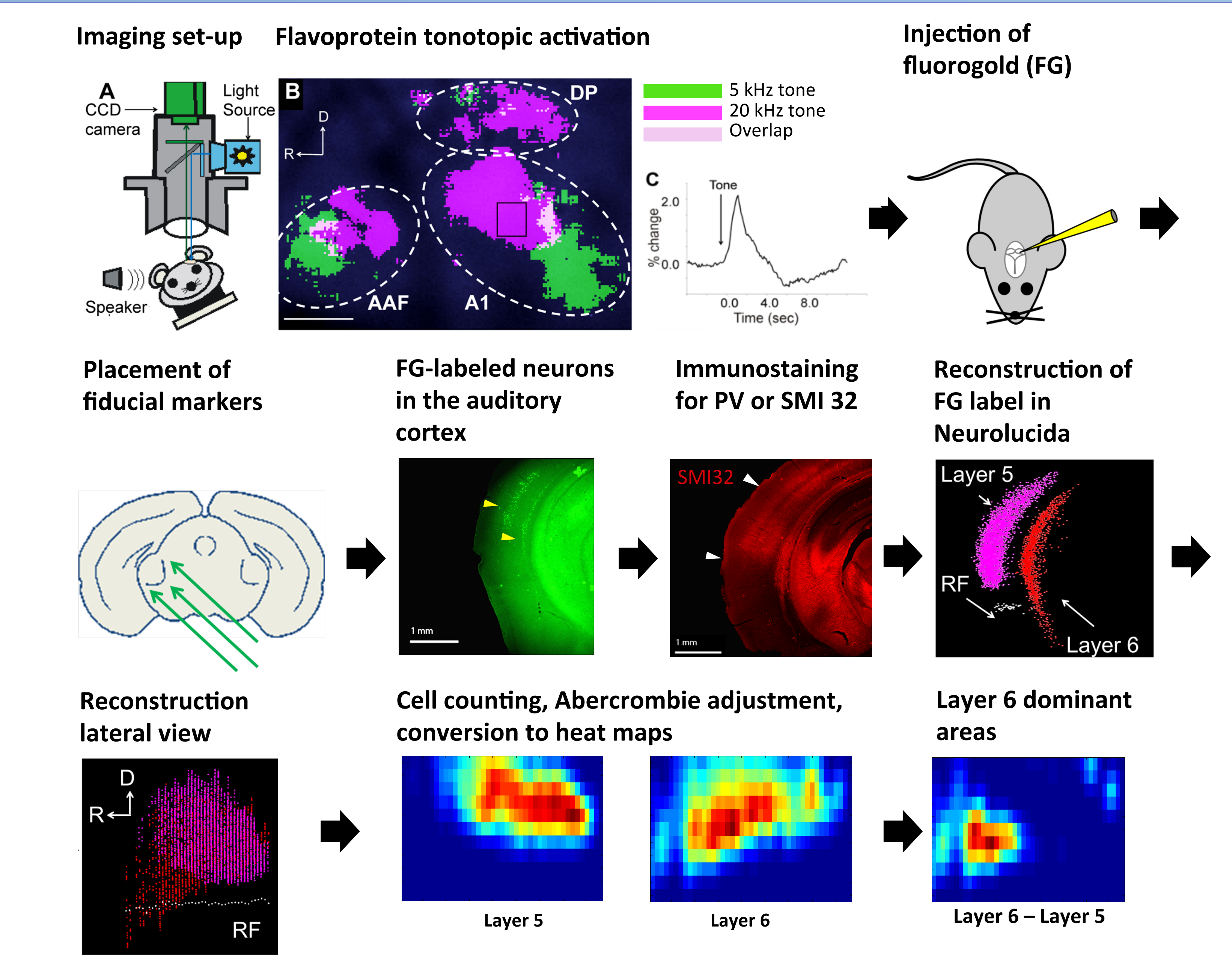
Layer-specific differences in the mouse auditory corticocollicular pathway: an anatomical study

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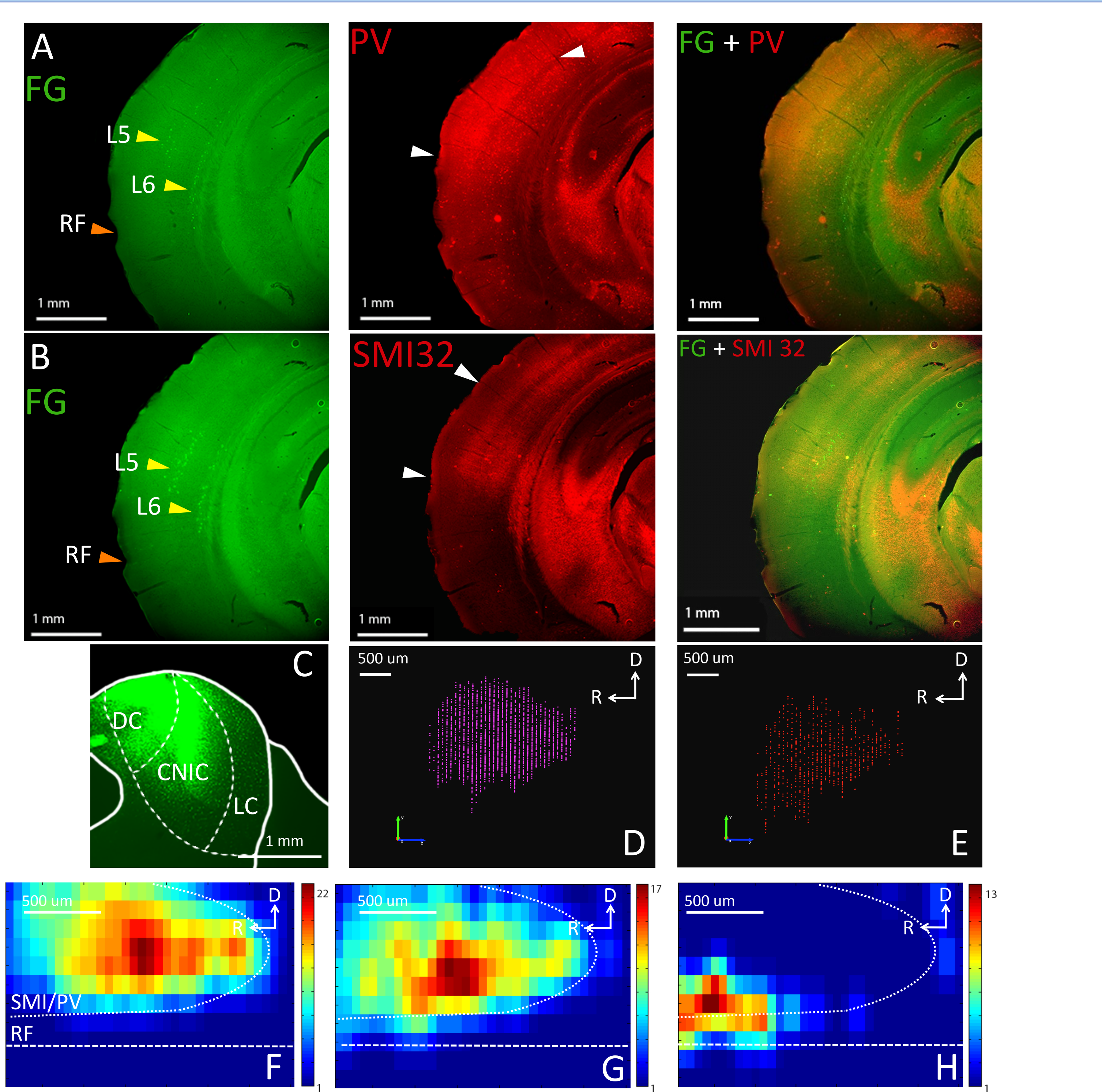
Introduction

- The auditory corticocollicular pathway consists of two distinct populations of cells - one emanating from cortical layer 5 and the other from deep layer 6 - that differ in terms of their firing properties and cellular morphology.
- In the present study, we sought to determine whether layer 5 and layer 6 corticocollicular cells differ in terms of their regions of origin within the auditory cortex and their termination patterns within the inferior colliculus.

Methods

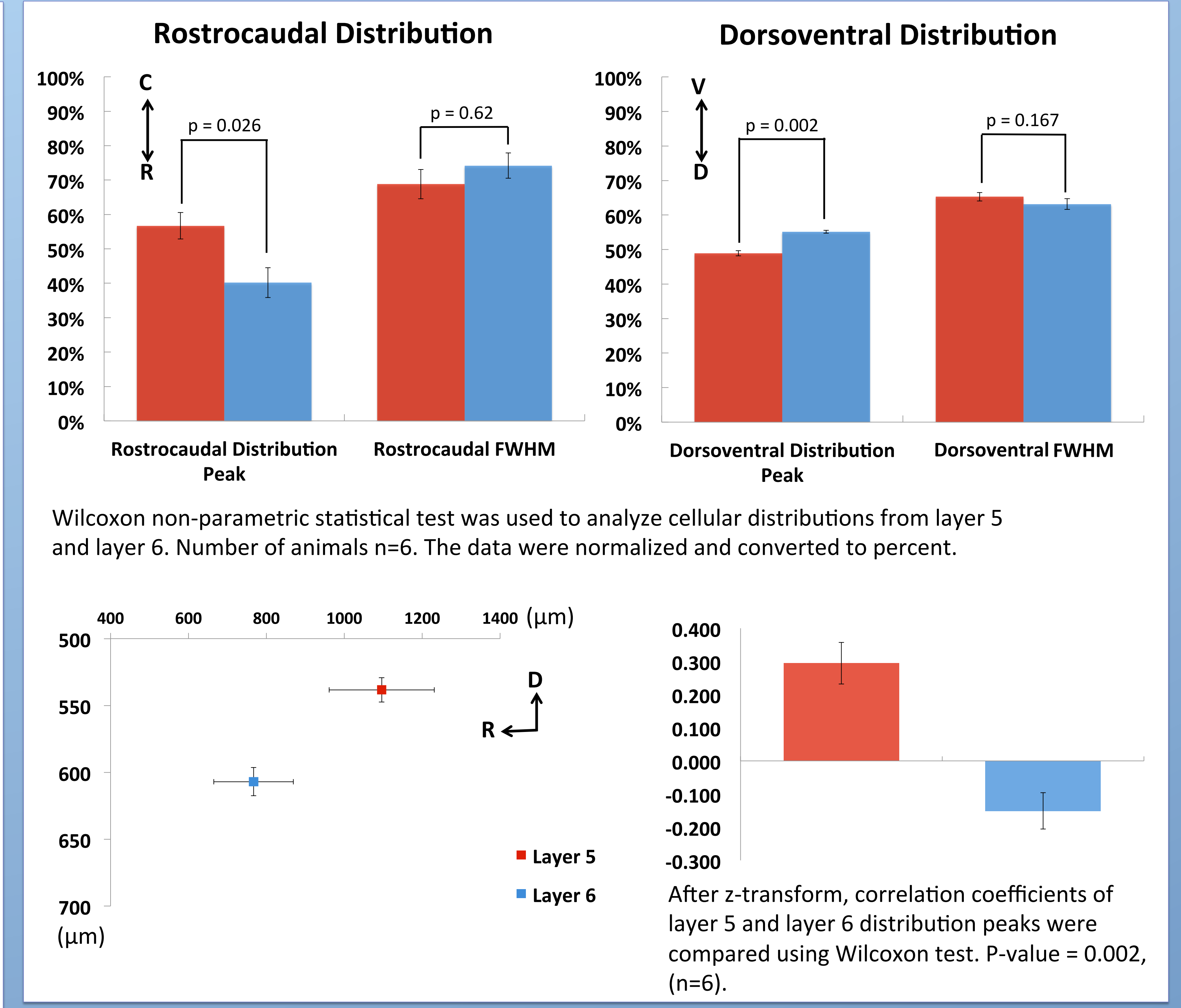


Results of Retrograde Study

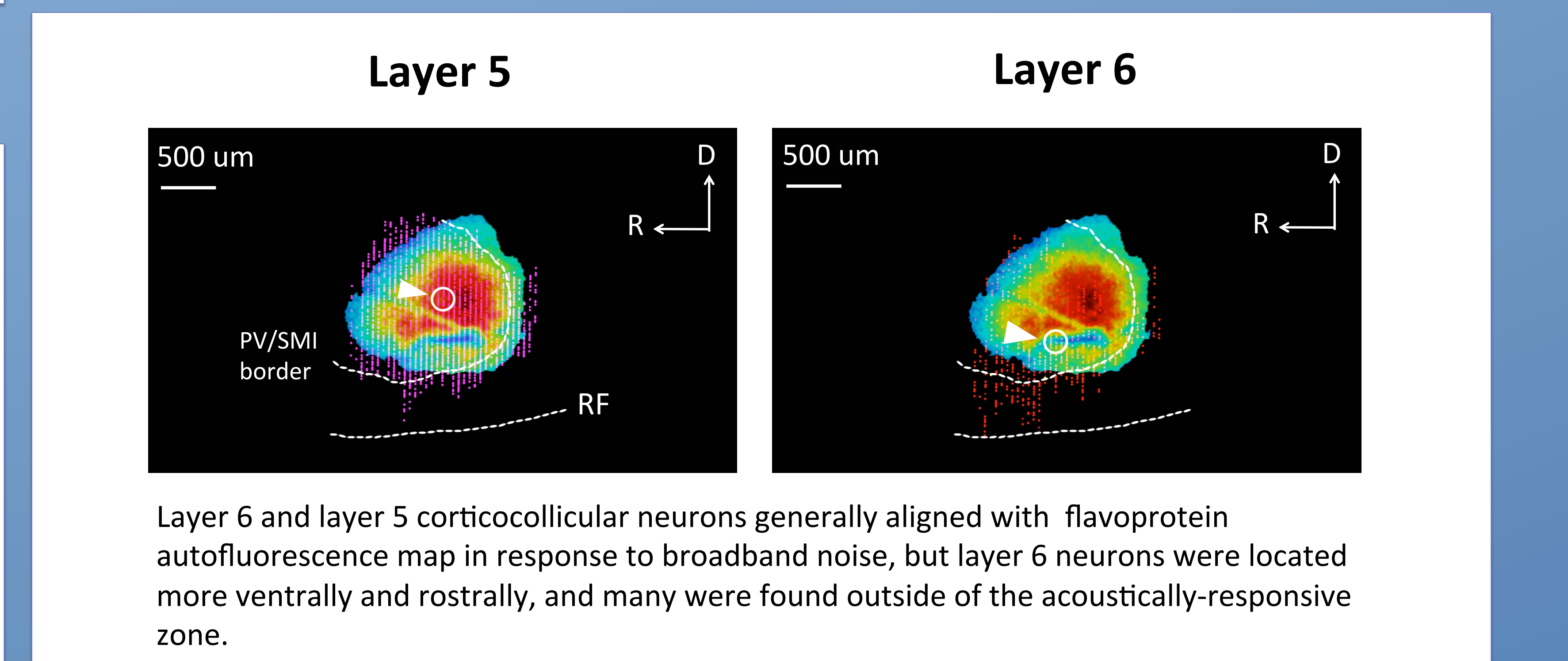


A. Retrogradely labeled with fluorogold layer 5 and 6 neurons, parvalbumin (PV) immunostaining and overlay. B. SMI32 immunostaining of a section with retrograde label. C. Injection site into the left inferior colliculus. D. Layer 5 cells reconstructed in NeuroLucida. E. Layer 6 cells reconstructed in NeuroLucida. F. Layer 5 heat map. G. Layer 6 heat map. H. Difference between layer 6 and 5.

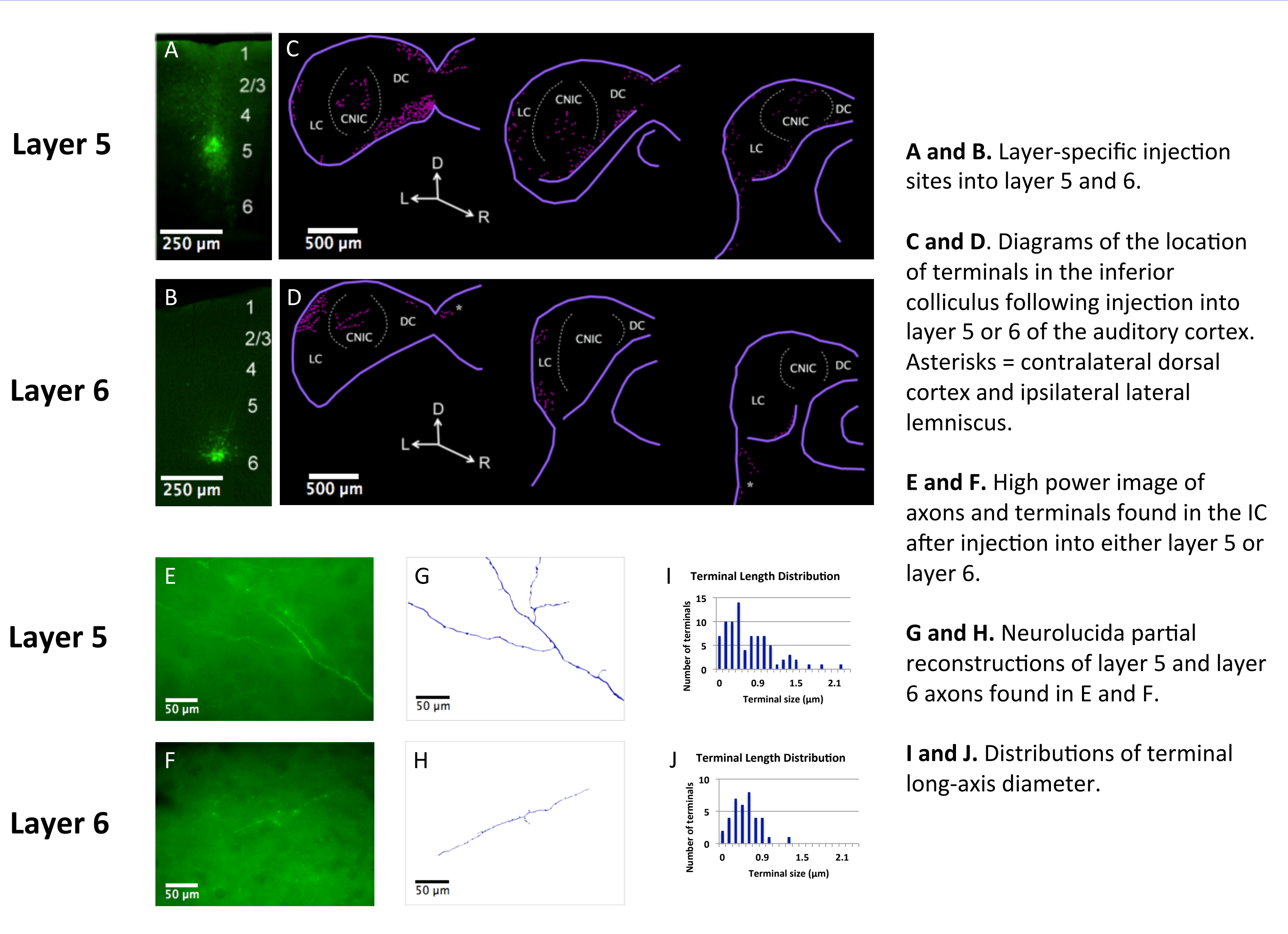
Retrograde Data Analysis



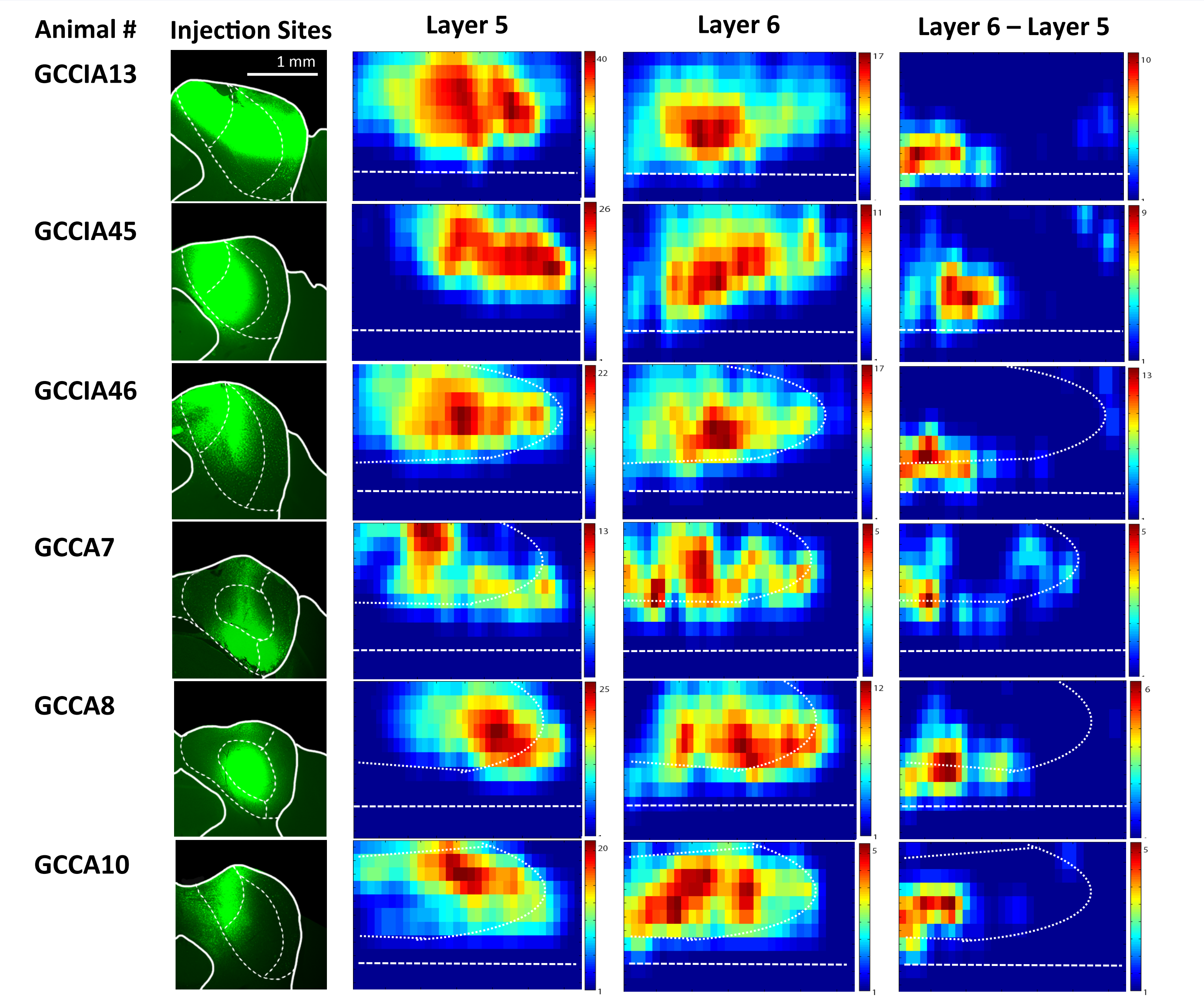
Spatial Relationship Between Layers And Neural Response To Sound



Results of Anterograde Study



Compiled Retrograde Study Data



Conclusions

- The rostral and caudal borders of the auditory cortex are rich in layer 6 corticocollicular cells.
- These cells may be preferentially positioned to integrate information from somatosensory and visual cortical areas, and route this multisensory information back to the inferior colliculus.

