Granule cell

The name granule cell has been used by anatomists for a number of different types of neuron whose only common feature is that they all have very small cell bodies. Granule cells are found within the granular layer of the cerebellum, the dentate gyrus of the hippocampus, the superficial layer of the dorsal cochlear nucleus, the olfactory bulb, and the cerebral cortex.

Cerebellar granule cells account for the majority of neurons in the human brain. These granule cells receive excitatory input from mossy fibers originating from pontine nuclei. Cerebellar granule cells send parallel fibers up through the Purkinje layer into the molecular layer where they branch out and spread through Purkinje cell dendritic arbors. These parallel fibers form thousands of excitatory granule-cell-Purkinje-cell synapses onto the intermediate and distal dendrites of Purkinje cells using glutamate as a neurotransmitter.

Layer 4 granule cells of the cerebral cortex receive inputs from the thalamus and send projections to supragranular layers 2-3, but also to infragranular layers of the cerebral cortex.