

## Cell junctions and neural circuits in Cerebellar Grey matter

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### Stellate cells

- Dendrites – Synapse with Parallel fibers
- Axons- Synapse with dendrites of purkinje cells

### Basket cells

- Dendrites – Synapse with Parallel fibers
- Axons- Synapse with soma of purkinje cells

### Purkinje cells

- Dendrites- Synapse with climbing fibers and parallel fibers
- Axons- Synapse with cerebellar nuclei

### Golgi cells

- Dendrites- Synapse with parallel fibers
- Axons and few dendrites- Synapse with Mossy fibers

### Granule cells

- Dendrites- Synapse with Mossy fibers
- Axons- forms parallel fibers- Synapse with dendrites of purkinje cells, stellate, basket, golgi cells

### Neural circuits

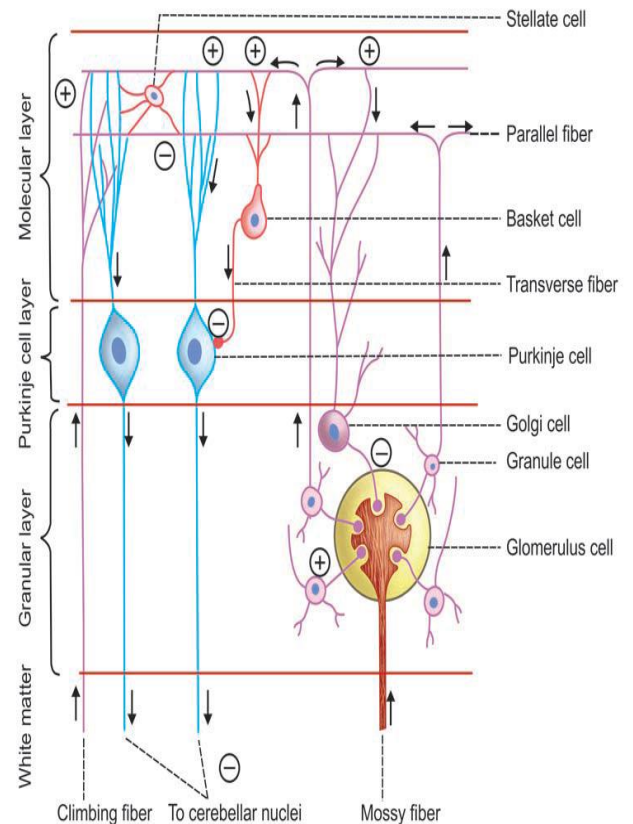
#### Output from Granule cells-Excitatory

#### Output from Purkinje cell, Basket cell, stellate cells, golgi cells –Inhibitory

**Climbing fibers-** Excites purkinje cells and cerebellar nuclei

**Mossy fibers-**Excites granule cells, golgi cells, cerebellar nuclei

**Granule cells-**Excites Purkinje cells, stellate cells, basket cells through parallel fibers



(Mossy fiber-Granule cells- Purkinje cells, stellate cells, basket cells)

**Stellate cells and basket cells**-Inhibits purkinje cells, purkinje cells inhibit cerebellar nuclei and vestibular nuclei

**Golgi cells**-inhibits granule cells (Mossy fiber-excites Golgi cells- inhibits Granule cells)