

3.神经细胞

2019年9月24日 13:36

CELL OF THE NEURAL SYSTEM

1665 Hooke, microscope, cell morphology

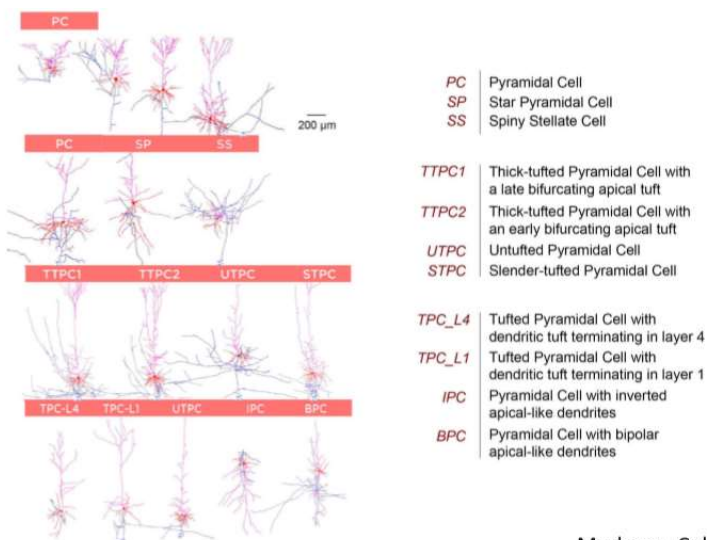
神经元观察: Golgi, 铬酸盐-硝酸银染色法

the debate between Cajal and Golgi

CELL MORPHOLOGY IN DIFFERENT BRAIN AREA

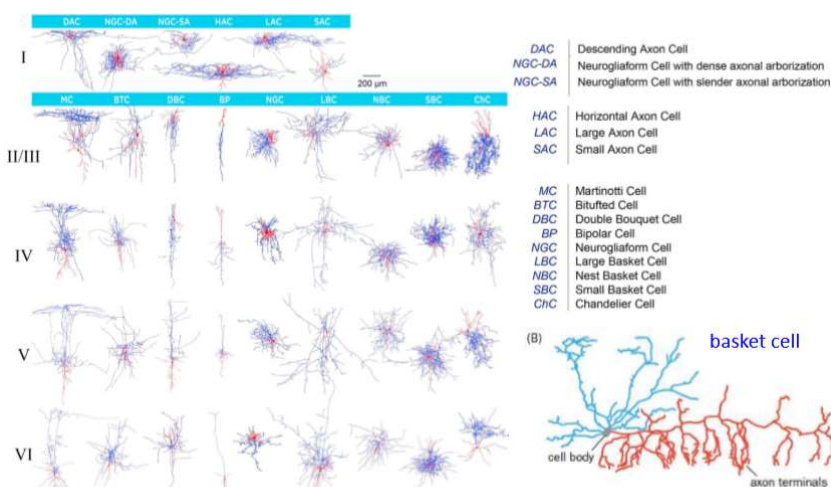
cerebral cortex: 六层, 外1内6

cortical excitatory neurons



Markram, Cell, 2015

cortical inhibitory neurons



Markram, Cell, 2015

学习记忆功能多处于 layer 1

神经系统的抑制调控: 前馈作用(feedforward control), 产生IPSP

inhibitory neuron 的抑制点位多种多样

Purkinje cells in the cerebellum (像树一样)

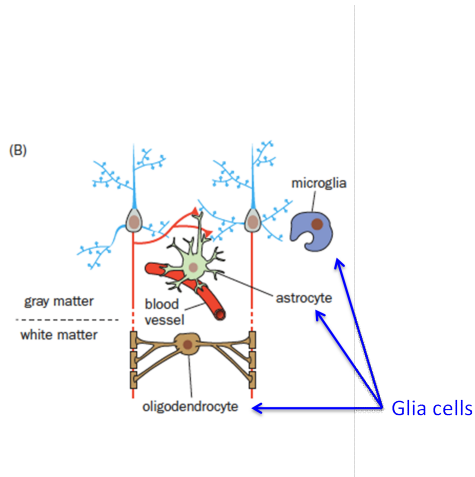
SOME FUNDAMENTALS IN THE NEURAL SYSTEM

sensory/afferent传入 neuron

interneuron/ association neuron

motor/ efferent传出 neuron

glia cell 胶质细胞



synaptic cleft: 20-100 nm

神经元 properties: excitability/ irritability, conductivity, secretion

Neuronal Structure-Dendrites & Spines

Complex Spatiotemporal Integration

dendritic spines: structural plasticity

spine formation precedes synapse formation

spine are mushroom-shaped and carry receptor plates

三种棘突: transient, semi-stable, stable

没有树突棘--智障?

Neuronal Structure-Axons

myelin sheath forming: Schwann cell(peripheral)/ oligodendrocyte(central)

