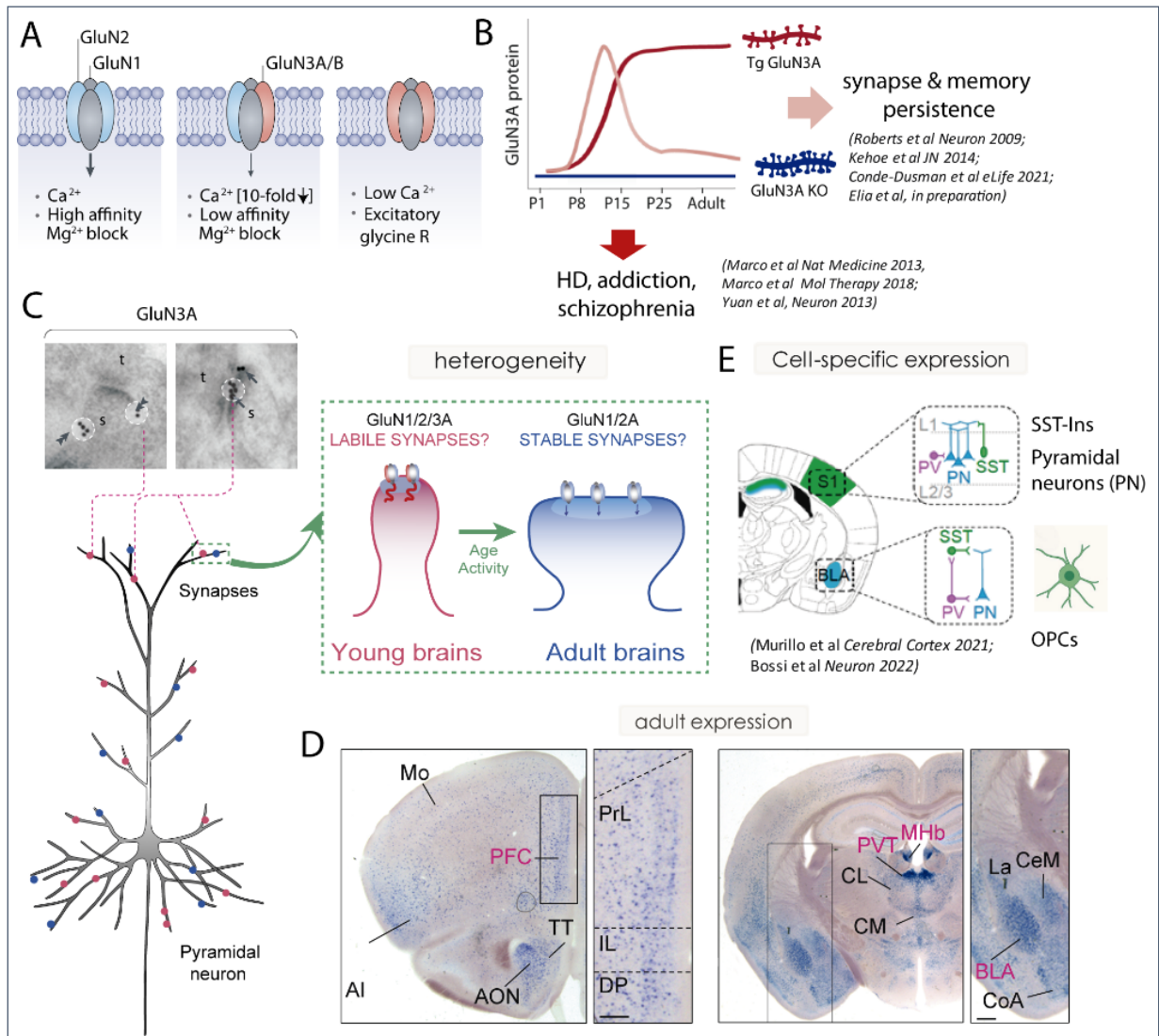


Known features and roles of GluN3A subunits (2009-2023)



A) GluN3A subunits (red) form two receptor subtypes: non-conventional NMDARs (GluN1/2/3A, middle) with distinct properties relative to classical NMDARs (GluN1/GluN2, left); and excitatory glycine receptors (GluN1/GluN3A, right). B) Genetic manipulations show that GluN3A imposes limits on synapse and memory persistence (tgGluN3A vs GluN3A KO). Inappropriate GluN3A reactivation underlies disease (Pérez-Otaño et al *Nature Reviews neuroscience*, Crawley et al *J Physiology* 2023). C) Subsets of synapses in young and adult brains express non-conventional NMDARs that counterbalance stabilizing effects of classical NMDARs. D, E) GluN3A expression is retained in selected brain regions and subpopulations of excitatory neurons, somatostatin (SST) interneurons and oligodendrocyte progenitors (OPCs) (from Murillo et al *Cerebral Cortex* 2021).