GLUTAMATERGIC SYNAPSE Citrate cycle (TCA cycle) Growth factor Attenuates activation (microglia) production (astrocyte) Glial cell Glu 🔿 $^{\operatorname{Gh}}{\mathfrak O}$ K13576 mGluR3 K05614.. **⊸**o_{Glu} φ_{Ca}^{2+} Autoreceptors mGhiR48 φ**a**cal mGluR7 Neuron (Postsynap tic cell) Long-term potentiation Long-term depression Na⁺Ca²⁺ Neuron (Presynap tic terminal) Feedback inhibition of glutamate release Mitochondria Neuronal excitability Synaptic plasticity OCAMP. Na + Endoplasmic reticulum Gln . °**⊙**⁵ Glu O-Ca²⁺ Na⁺ Calcium signaling pathway • Glu K15008 Exocytosis Synaptic vesicle K15010 • $\overset{lack}{oldsymbol{\diamondsuit}} extstyle extstyle$ ಄ K15010 0 Synaptic vesicle cycle K15010 0 Glu Glu . • Neuronal excitability Synaptic plasticity K02677... DAG Endocytosis K04632 cAMP Action potential Glu Synaptic cleft 04724 10/23/15 (c) Kanehisa Laboratories