

## **P2.25.**

### **Effects of L-aspartate on single neurons in striatal slice preparation from chicken brain**

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There is accumulating evidence for a transmitter role of L-aspartate (L-Asp) in various brain regions. Recent studies from our laboratory have indicated that L-Asp is present in excitatory synapses of the striatum/nucl. accumbens of domestic chicks where it is co-released with L-glutamate (L-Glu) from axon terminals. Here we provide data on the postsynaptic effects of L-Asp alongside with L-Glu in striatal slices from chicken (1- to 5-day-old) using visually guided patch-clamp technique. Bath application L-Asp and L-Glu produced similar dose-dependent inward currents and an increase in spontaneous synaptic activity with a threshold concentration around 200  $\mu\text{M}$  in all of the recorded striatal neurons. The amplitude of the inward currents were not substantially modified when the slices were perfused with TTX-containing (1  $\mu\text{M}$ ) Krebs solution to block Na spikes and synaptic transmission suggesting a predominant postsynaptic effect of both excitatory amino acids. In the presence of TTX both the NMDA receptor antagonist D-AP5 (25-100  $\mu\text{M}$ ) and the AMPA/kainate receptor antagonist CNQX (10-20  $\mu\text{M}$ ) reduced and the co-application of these two antagonists abolished the postsynaptic effects of L-Asp and L-Glu in a reversible manner. The data are the first to demonstrate that L-Asp can induce postsynaptic effects on the chicken striatal neurons. These effects are mediated by both NMDA and non-NMDA type ionotropic glutamate receptors and are similar to those evoked by L-Glu. OTKA 73219