

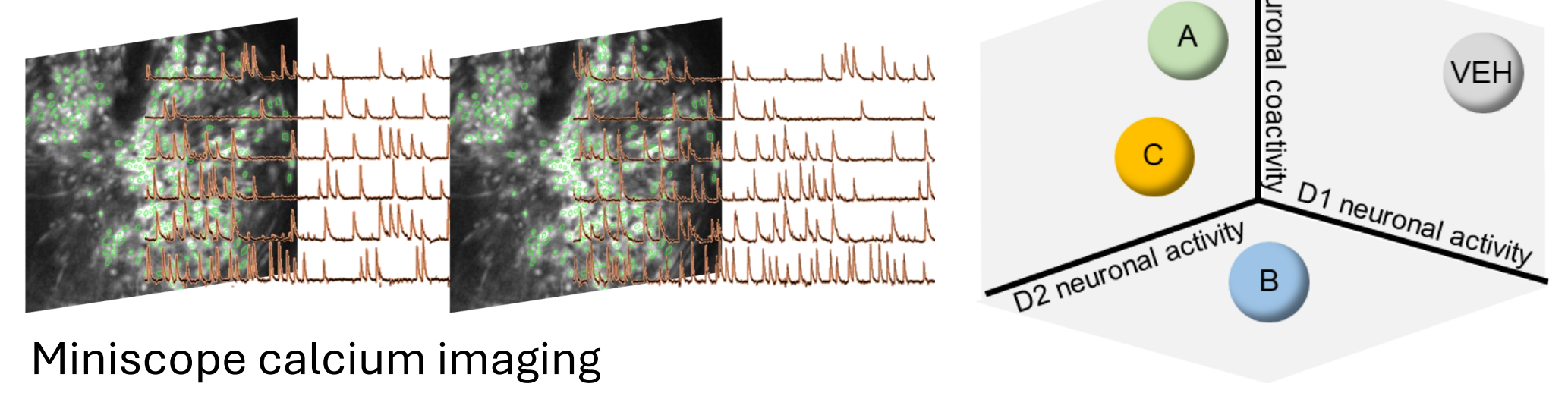
Background

- Schizophrenia is associated with striatal hyperdopaminergia and dysregulated glutamatergic function. First-generation antipsychotics (e.g., haloperidol) primarily act through D2 receptor antagonism, while second-generation agents (e.g., clozapine) also target 5-HT2A receptors. Recently, TAAR1 agonists have emerged as a promising new treatment approach.
- Existing preclinical assays for antipsychotics that rely solely on traditional behavioral readouts are largely unable to differentiate between distinct mechanisms and have a poor track record of predicting clinical performance.
- Simultaneous neural and behavioral recordings with miniscopes reveal detailed relationships between neural function and behavioral symptoms, enabling precise differentiation of mechanisms and the development of predictive preclinical assays.

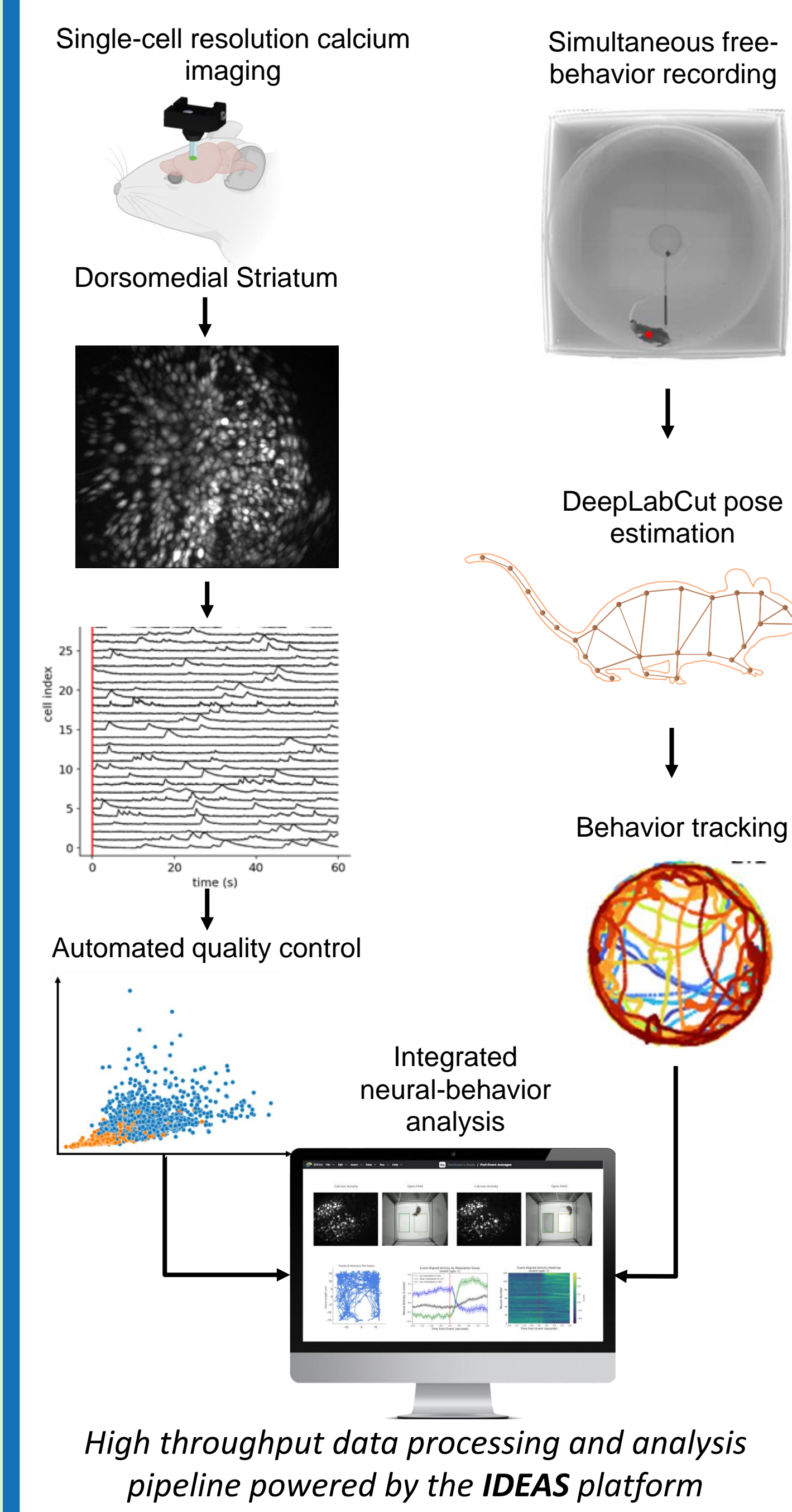
Standard behavior-based assay



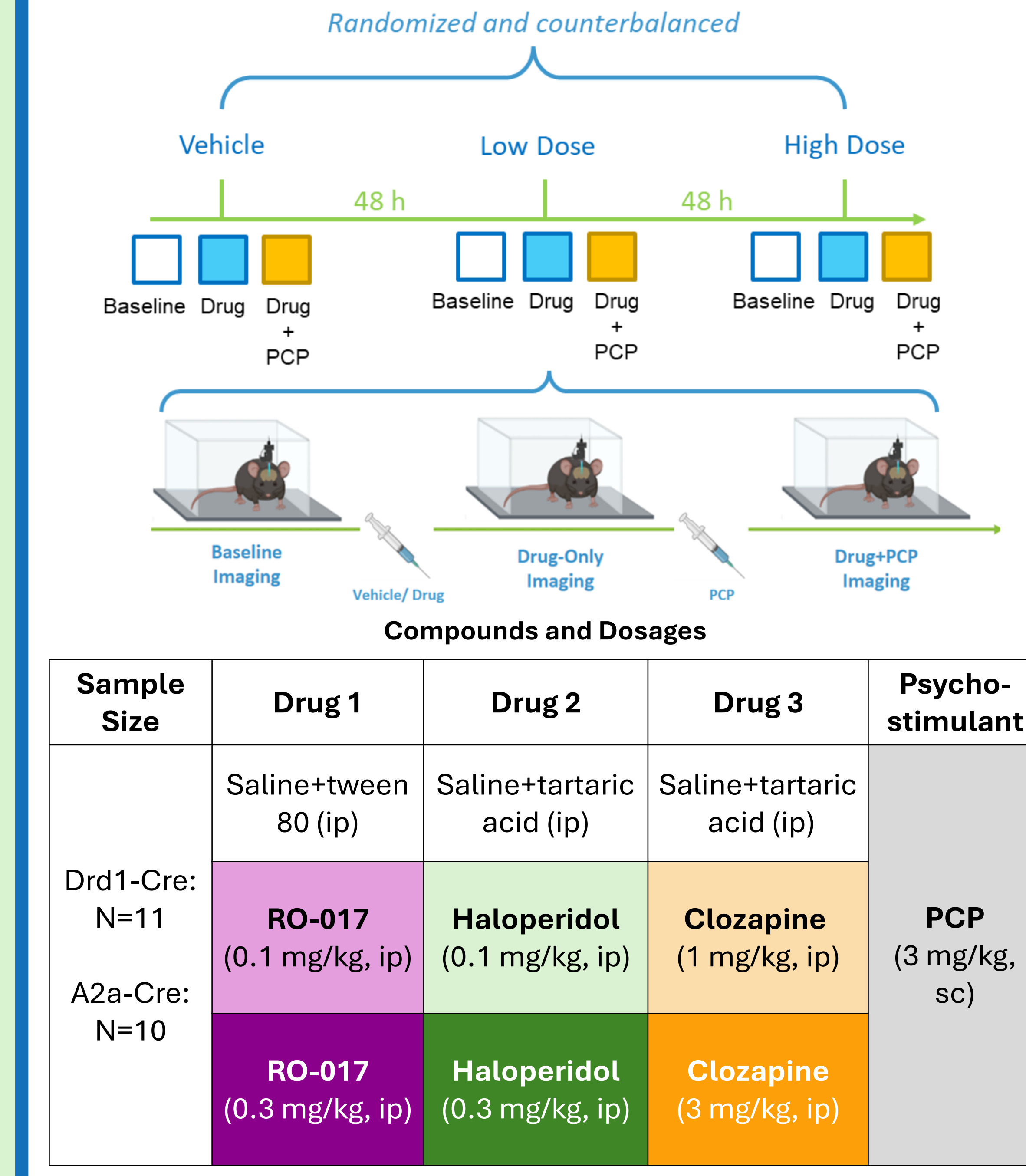
Inscopix circuit-based neurobehavioral assay



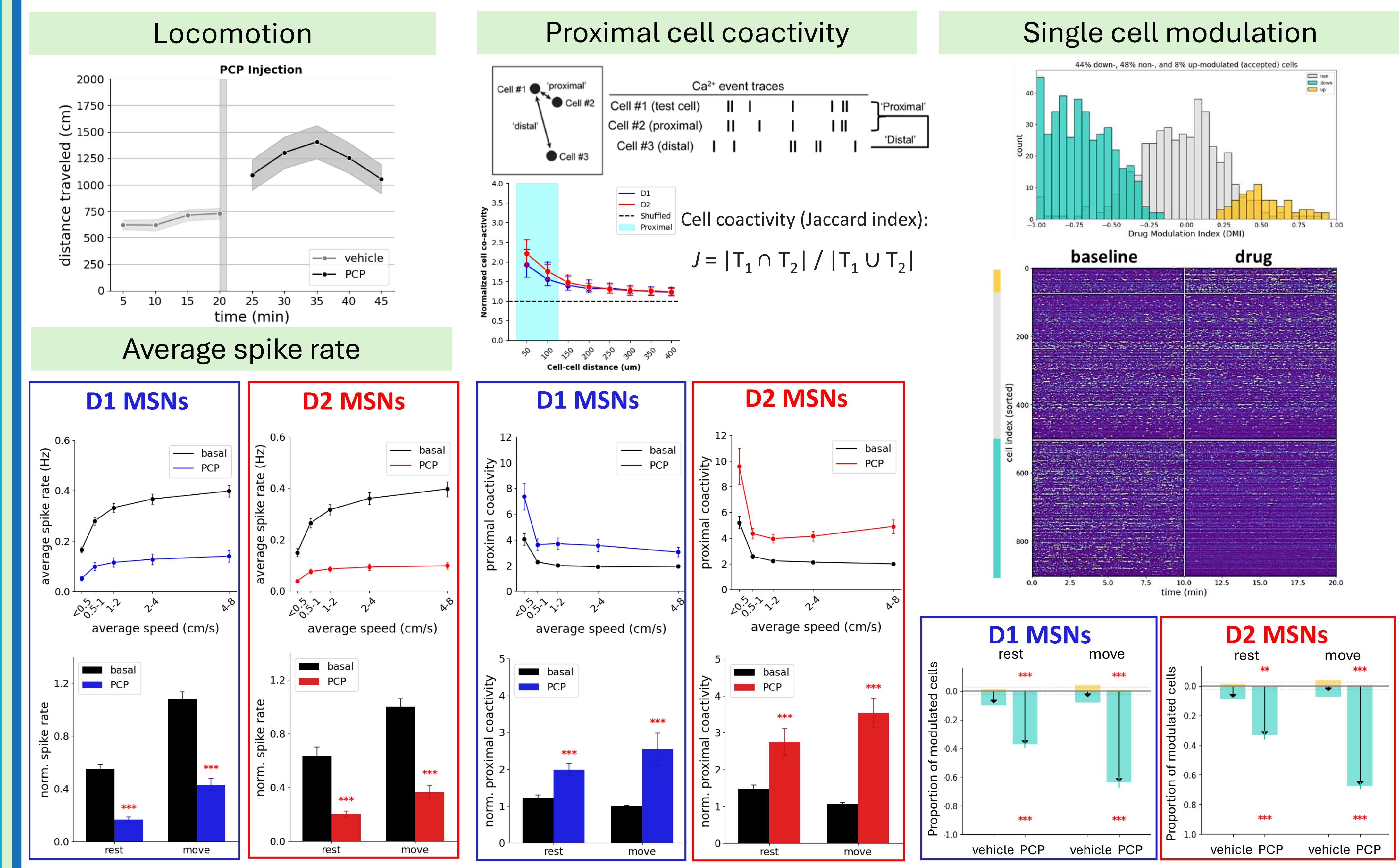
Data workflow



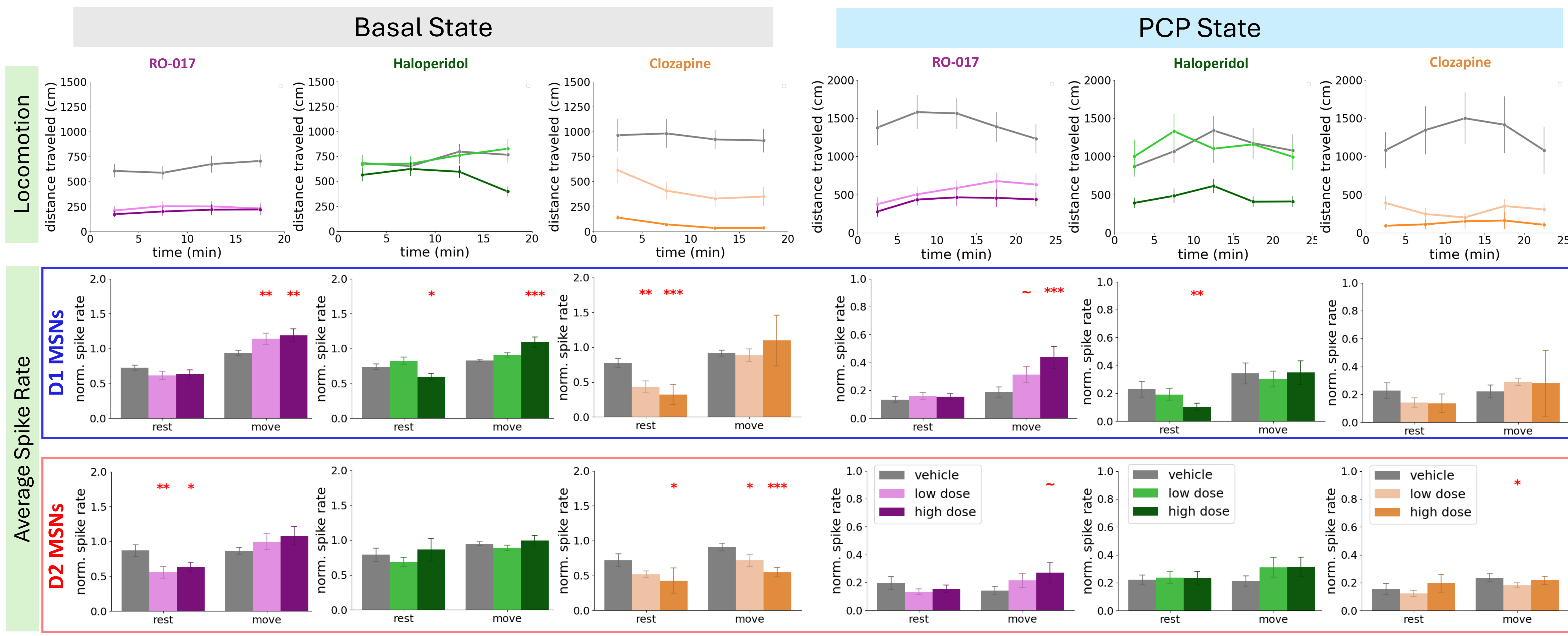
Experimental design



The effect of PCP on locomotion and neural activity



Neurobehavioral profiling of antipsychotics



Neurobehavioral profiling distinguishes antipsychotic mechanisms

