

## **Characterization of the effects of novel positive allosteric modulators on the functionality of the alpha 7 nicotinic acetylcholine receptor (nAChR)**

The alpha 7 nicotinic acetylcholine receptor (nAChR) has been implicated in the development of many neurodegenerative disorders such as Schizophrenia, Alzheimer's disease, Parkinson's disease, and a series of inflammatory disorders. In recent years, there has been an increased interest in the pharmacological modulation of receptor function as a therapeutic target. However, these efforts have been limited due to poor temporal and tissue selectivity. Therefore, there is a growing need for the synthesis of new modulators that can tackle these problems. Positive Allosteric Modulators (PAMs) for the alpha 7 nAChR have grown in significance and are currently being developed by many pharmaceutical companies. The California Northstate University has provided us four novel PAMs (PAMs 2, CF-3, OCF-3, DM489) in order to test their functionality on the alpha 7 nAChR. Three of these PAMs have shown indirect PAM activity on the alpha 7 nAChR through calcium influx test using fluorescence microscopy, however, the direct effects of these drugs has not been tested. Our goal is to take advantage of the *Xenopus* oocyte expression system to study the direct effects of these drugs on the alpha 7 nAChR using Two-Electrode Voltage Clamp (TEVC) electrophysiology.