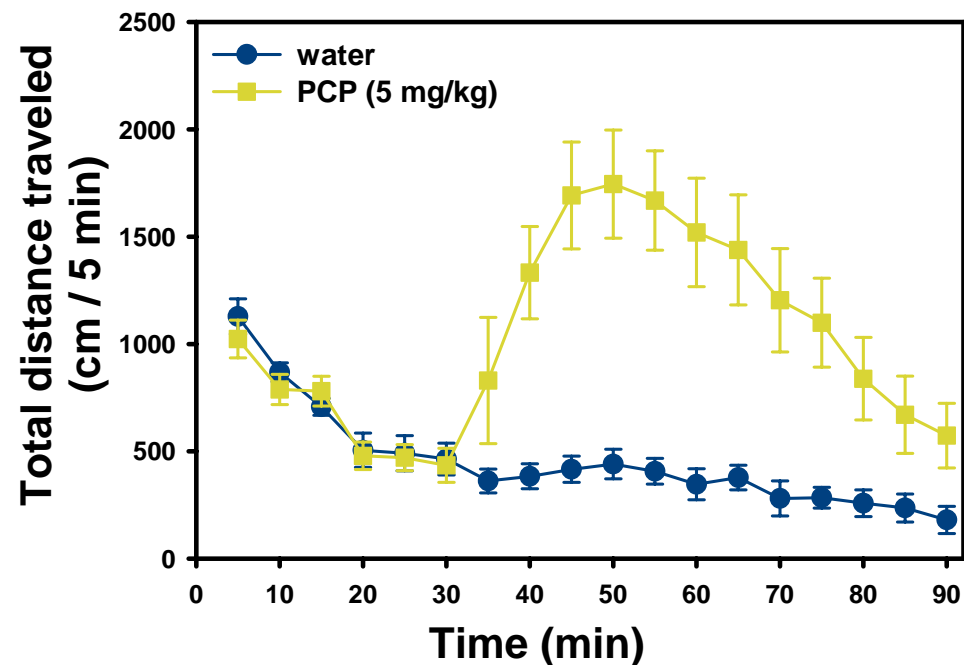


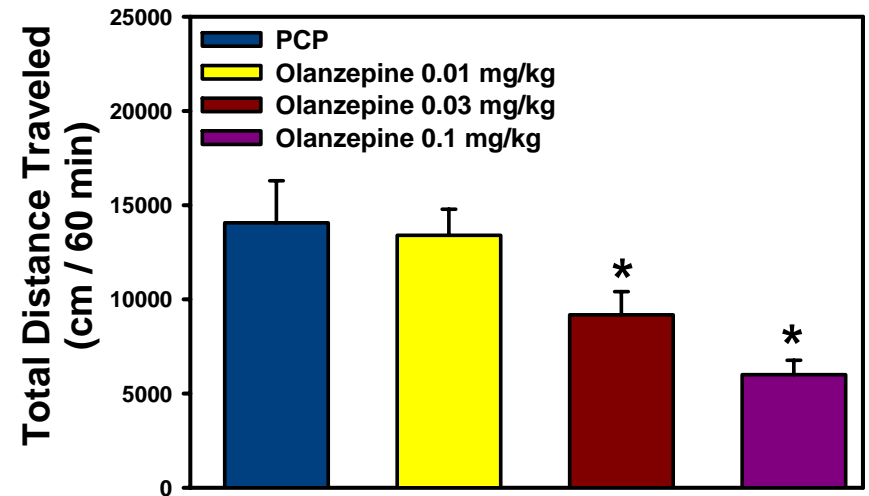
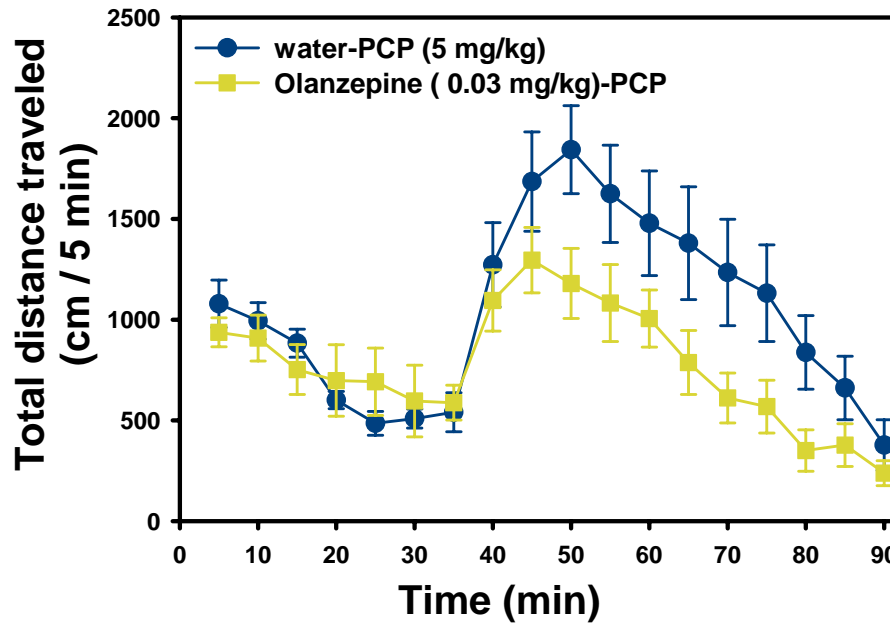
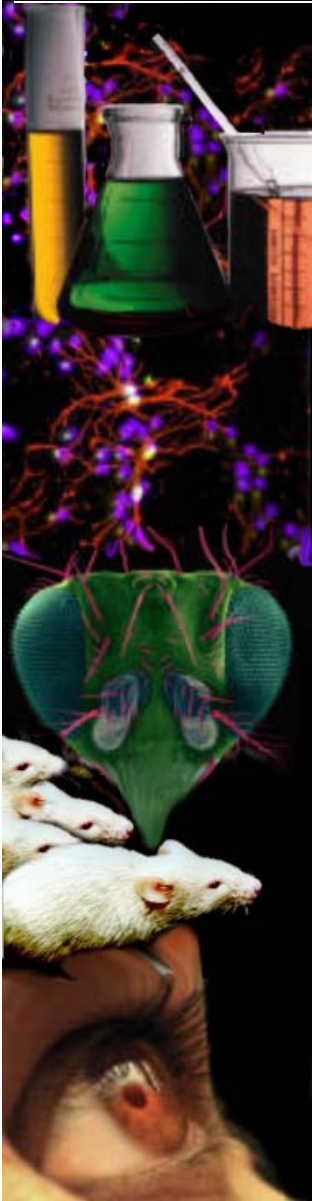
# Behavior Paradigms for Psychosis and Mania

# PCP increases locomotor activity of C57 mice

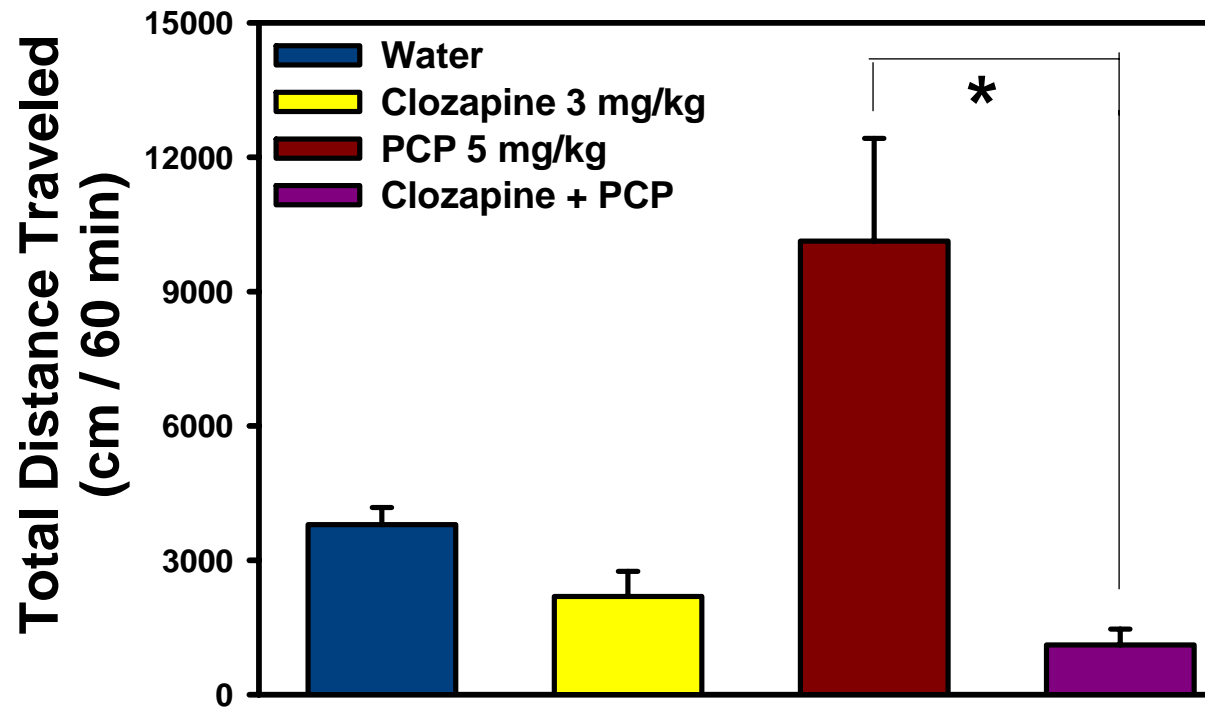
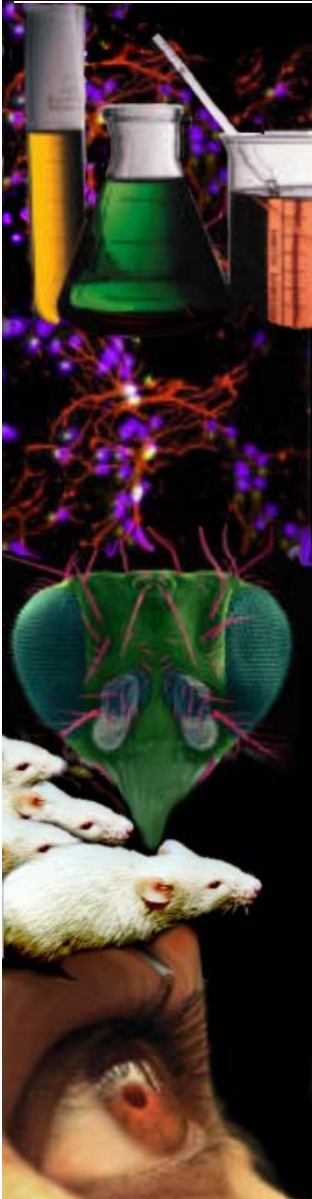
In humans, acute administration of PCP causes schizophrenia-like symptoms. This is manifested in rodents as an increase in locomotor activity. Antipsychotic agents attenuate PCP-induced hyperactivity in rodents.



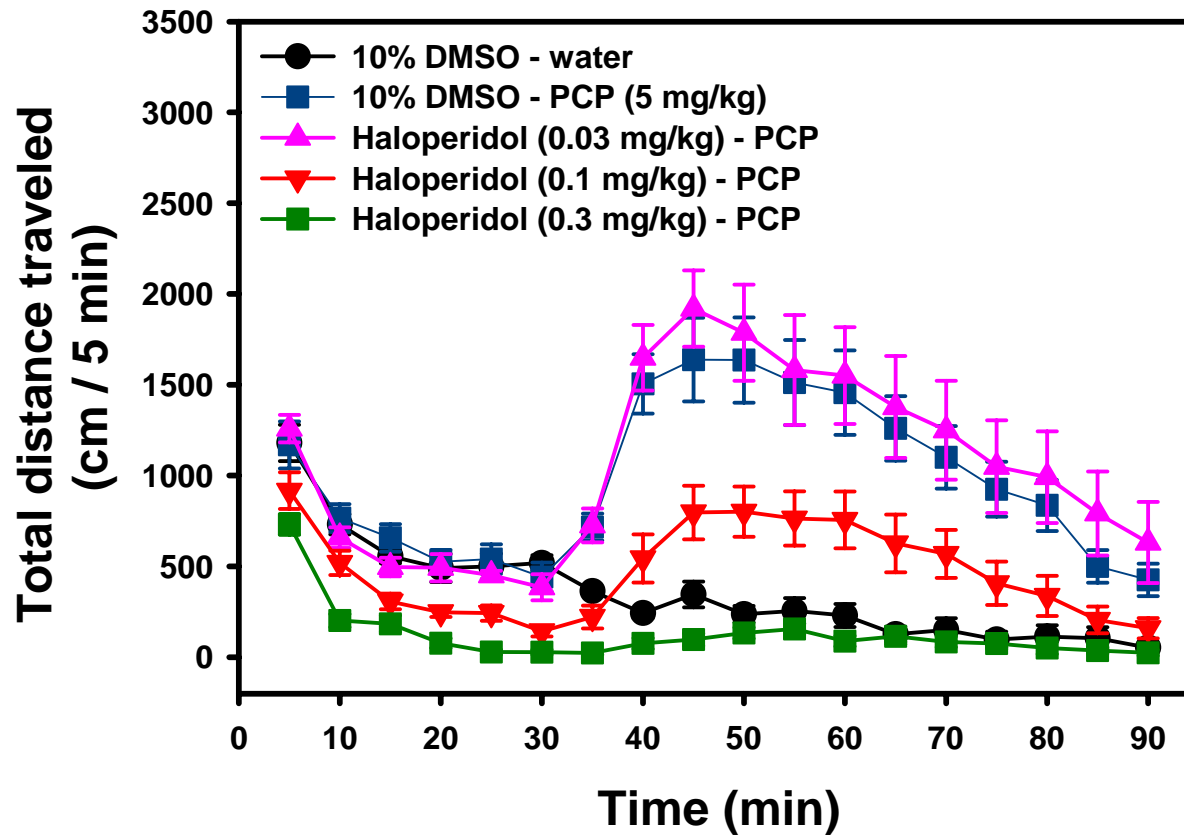
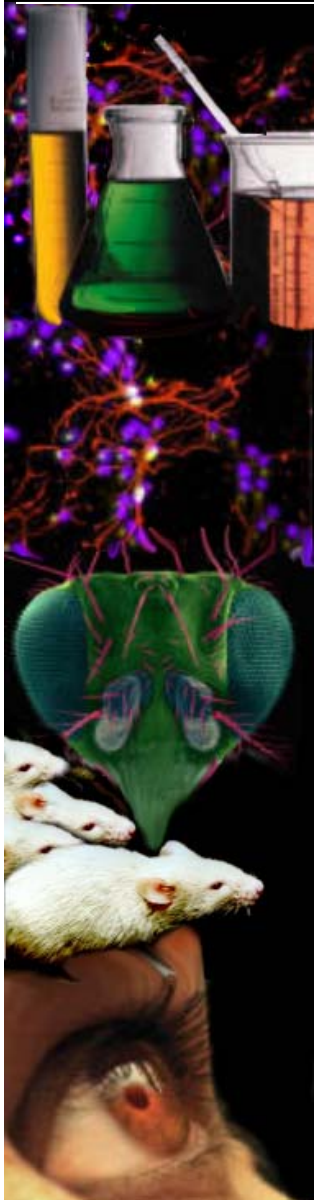
# Olanzapine attenuates PCP-induced activity



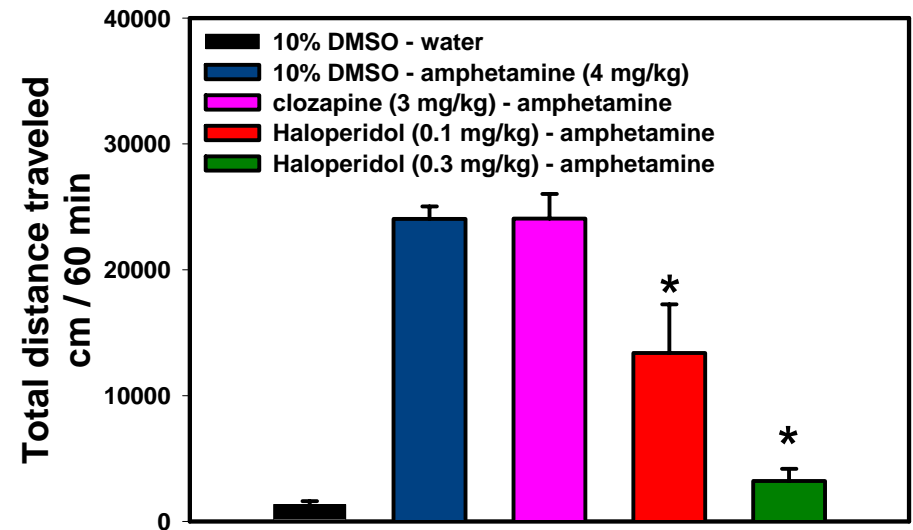
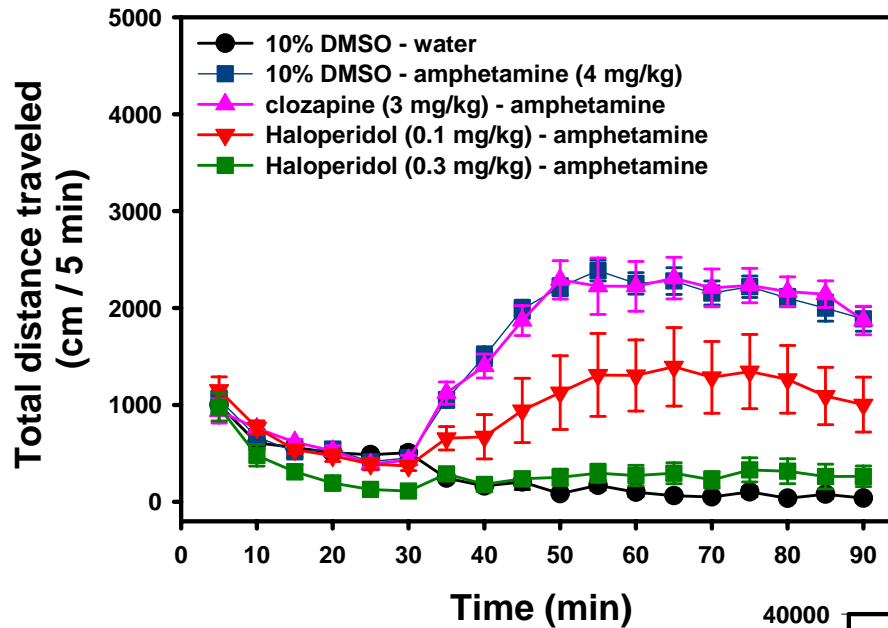
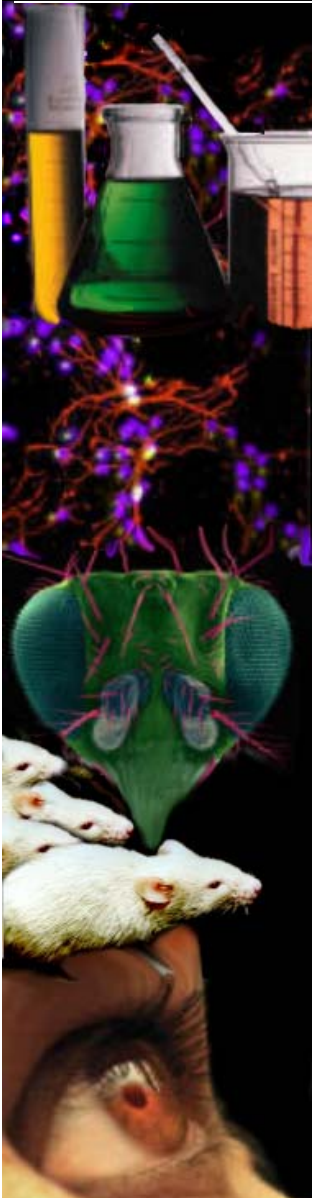
# Clozapine attenuates PCP-induced activity



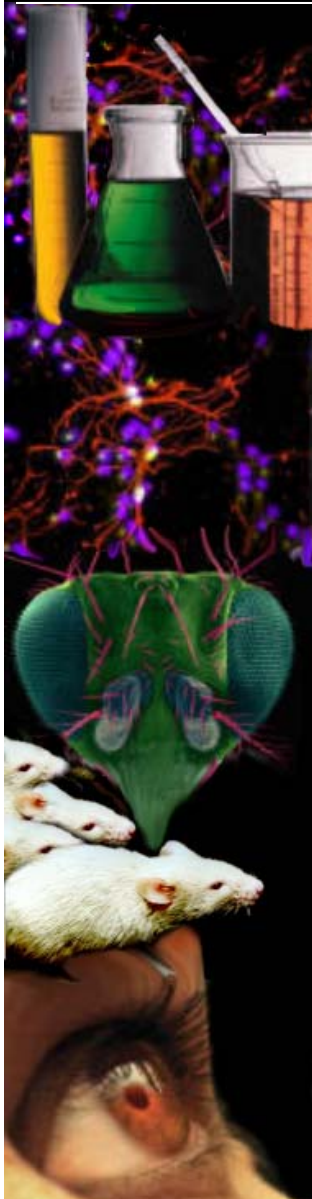
# Non-sedative doses of haloperidol have no effect on PCP-induced activity



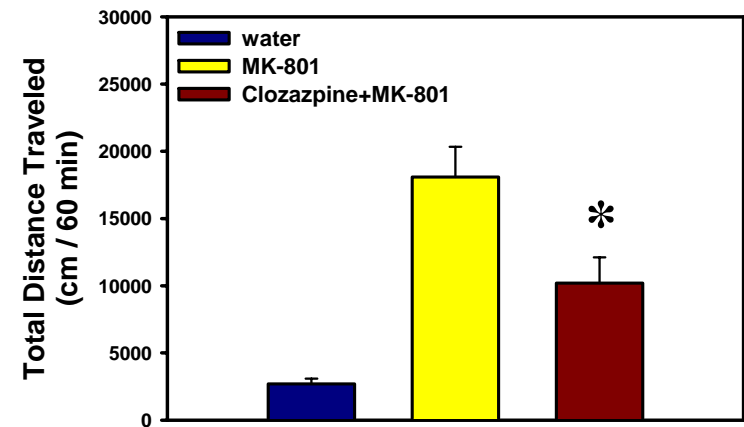
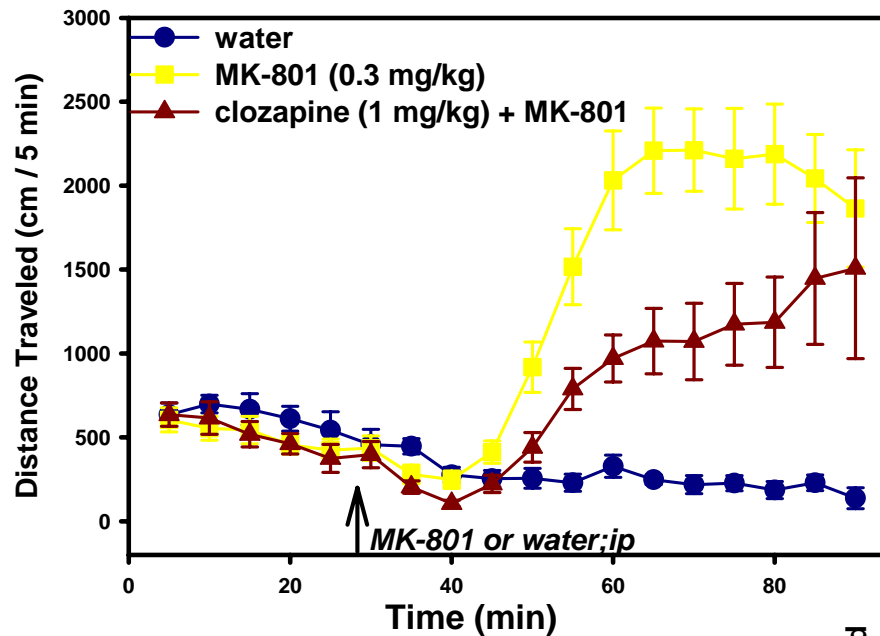
# Atypical antipsychotics have no effect on amphetamine-induced activity



# MK-801 increases locomotor activity of C57 mice



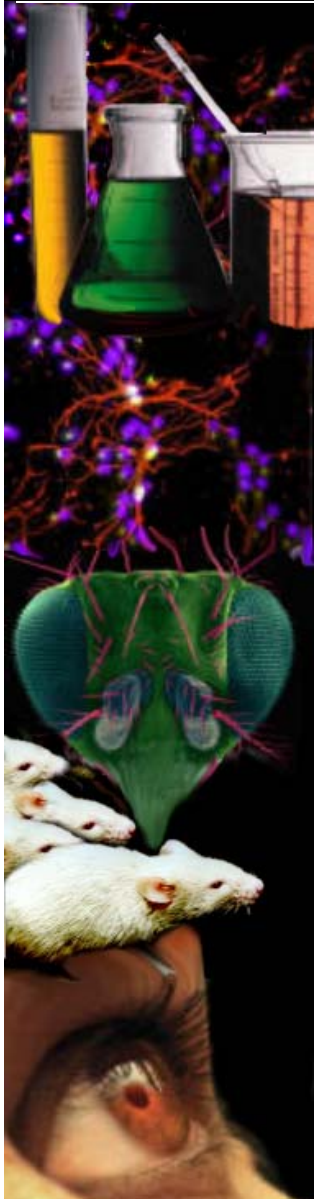
Acute administration of the NMDA receptor antagonist MK-801 causes hyperactivity in rodents. Antipsychotic agents attenuate MK-801-induced hyperactivity.



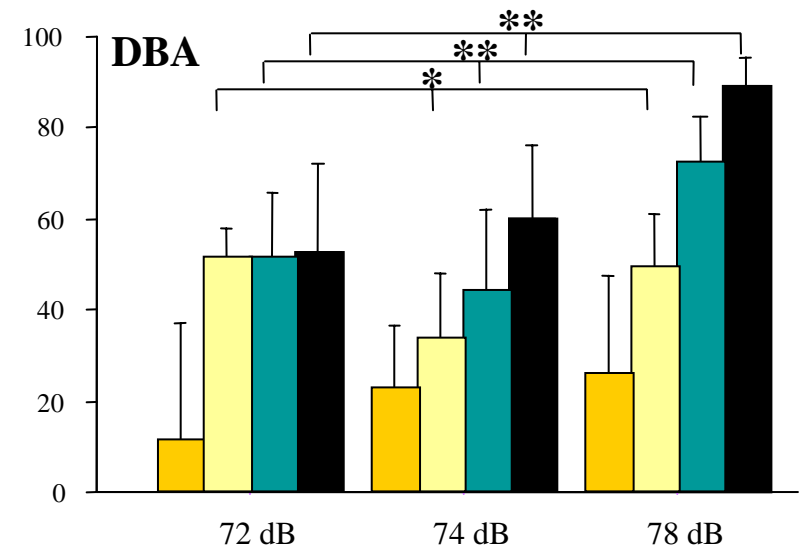
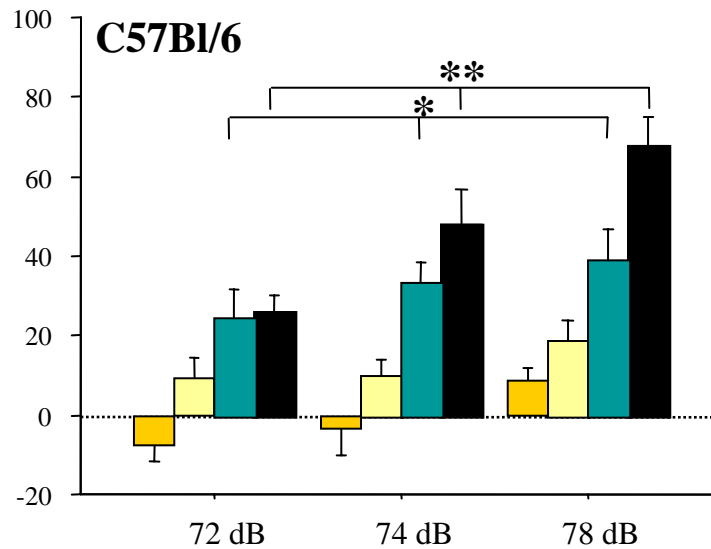
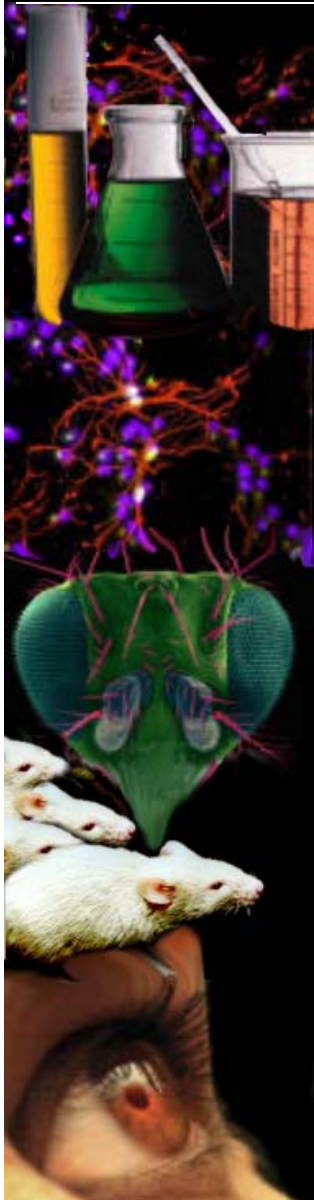
*confidential*

# Prepulse Inhibition of Acoustic Startle

The presentation of an acoustic prepulse stimulus will attenuate a normal acoustic startle response. This effect is known as Prepulse Inhibition of startle (PPI). In rodents, acute administration of PCP or MK-801 can disrupt PPI. Antipsychotic agents will increase the PPI response and also reverse the effects of disrupters.

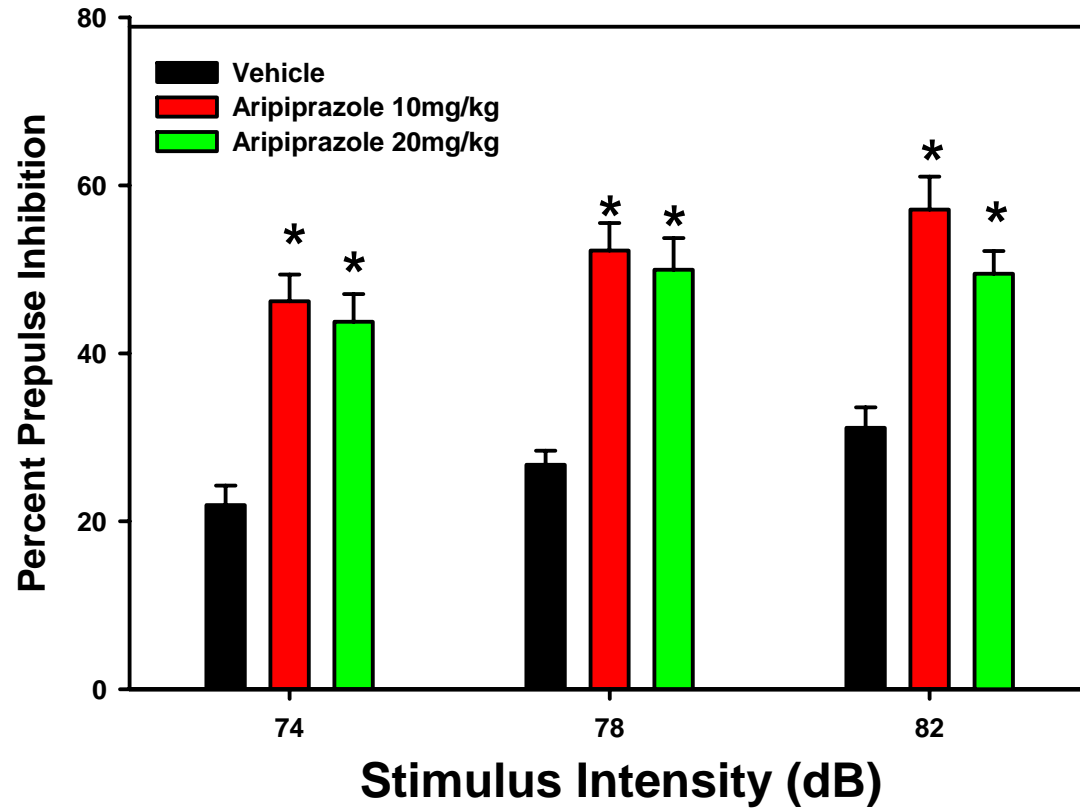
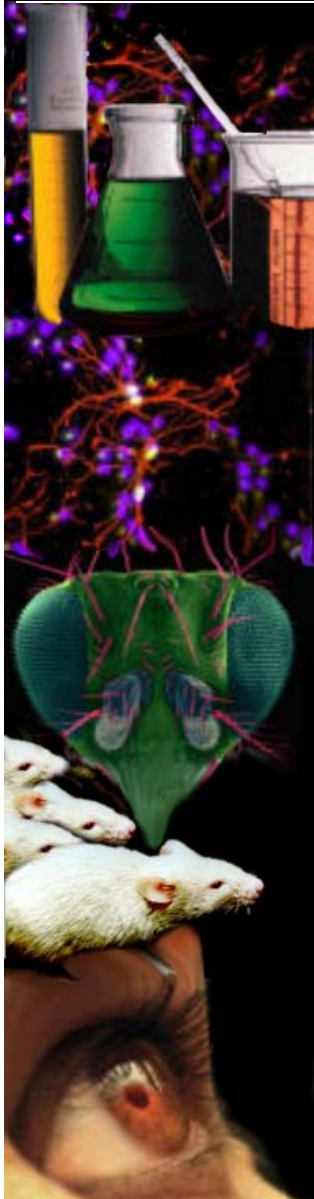


# Prepulse inhibition of startle: strain effect



Clozapine  
 1 mg/kg  
 3 mg/kg  
 9 mg/kg

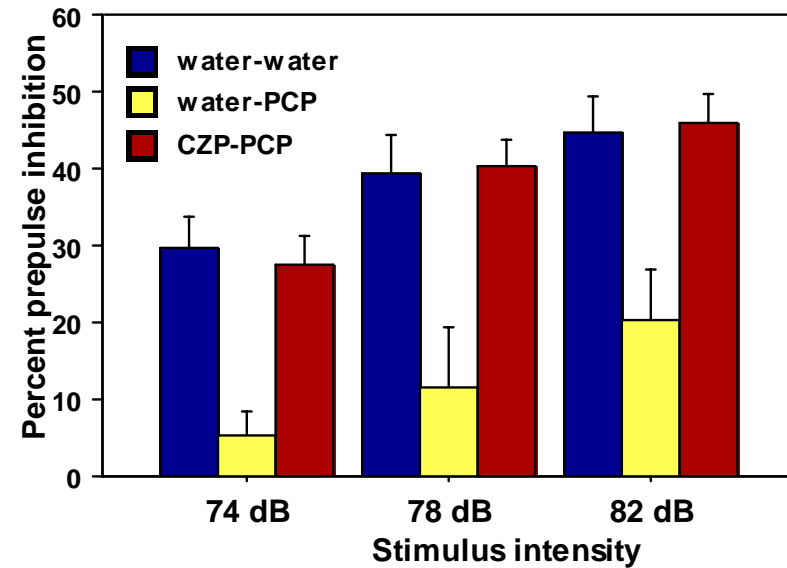
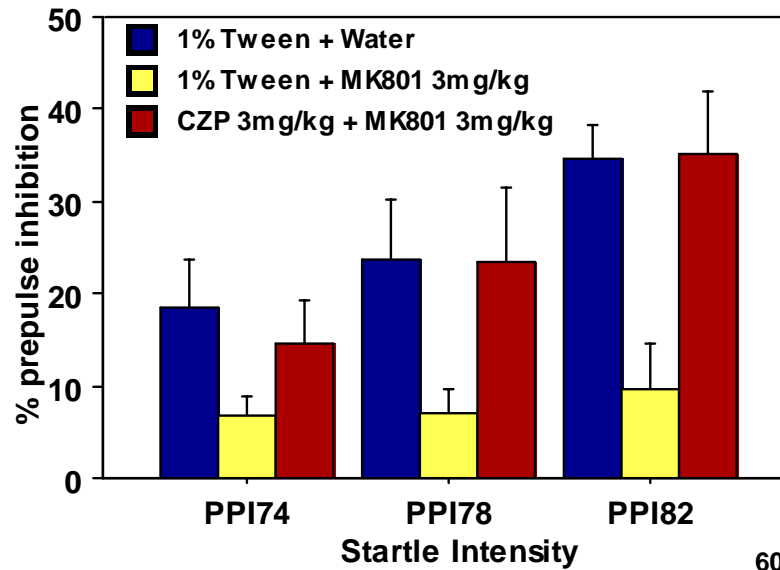
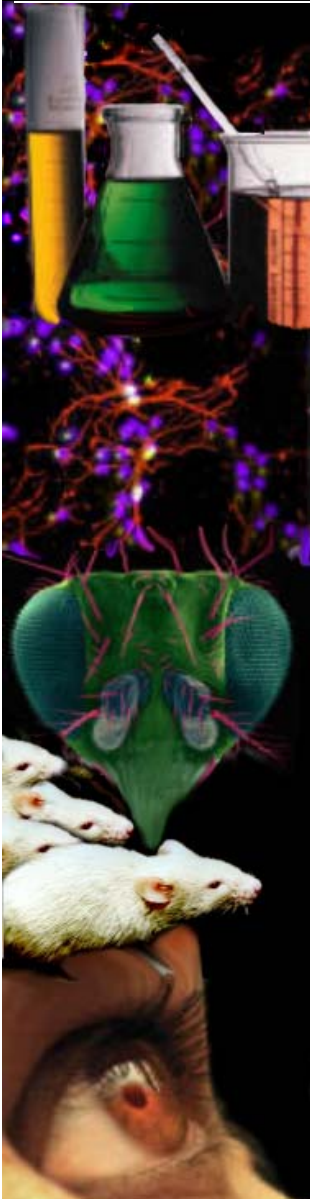
# Aripiprazole increases PPI





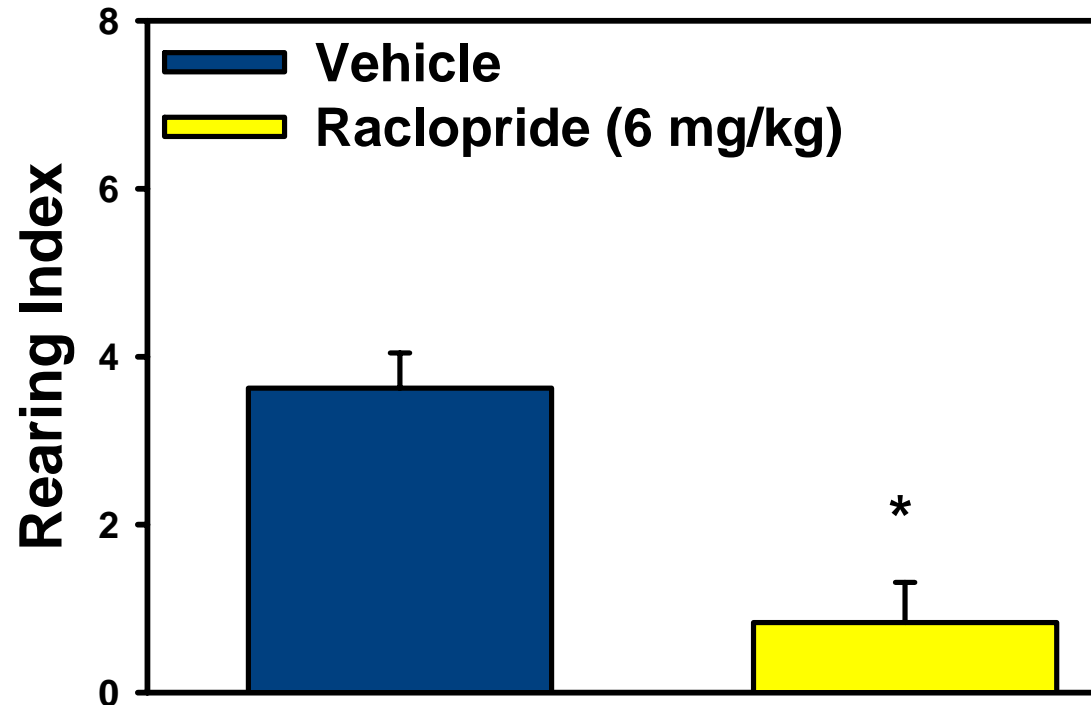
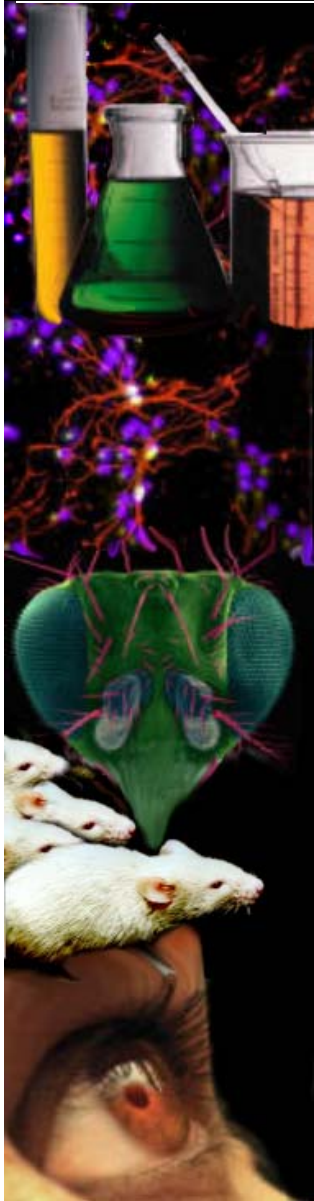
PsychoGenics

# Clozapine reverses PCP and MK-801-induced disruption in PPI

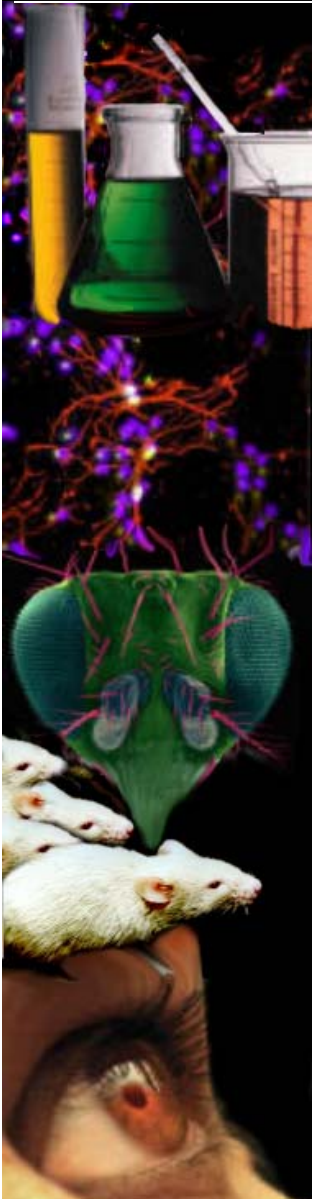


*confidential*

# Apomorphine-induced rearing and climbing in C3H mice

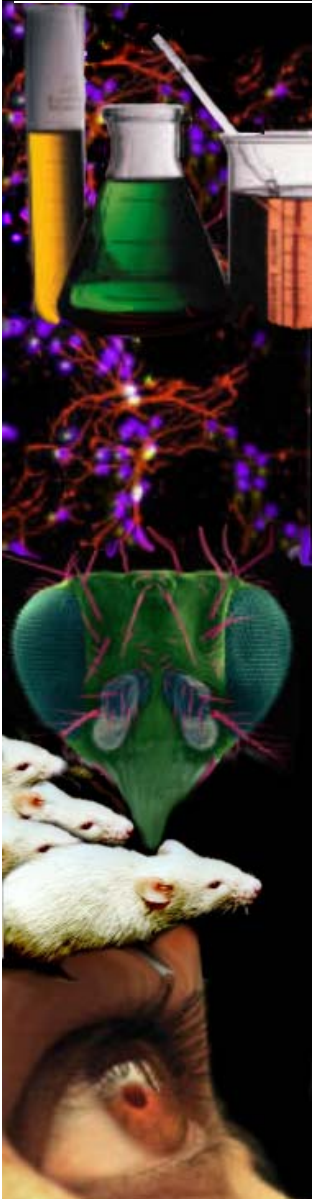


Apomorphine: 10 mg/kg



## *Mouse Models for Mania*

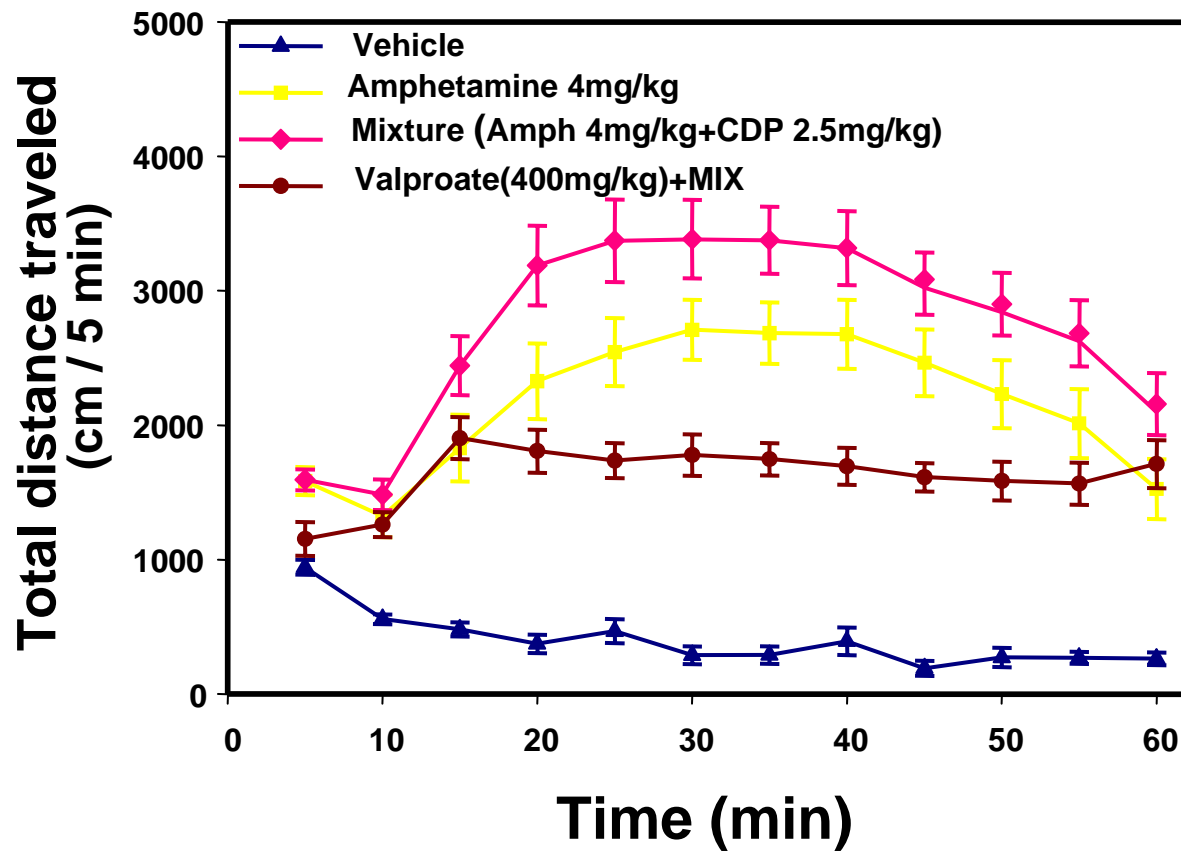
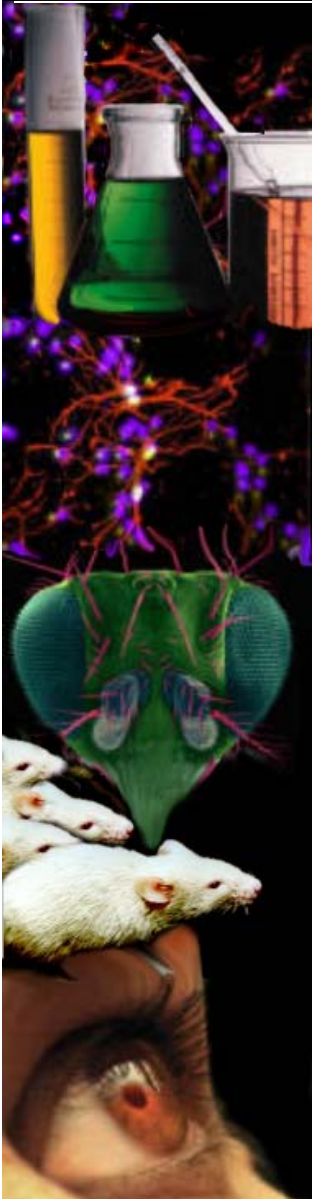
# Amphetamine / CDP Induced Hyperactivity



- **Bipolar disorder can be accompanied by episodes of mania and depression and in severe cases psychosis.**
- **Animal models for bipolar disorder/mania are scarce. Hyperactivity-based studies are often used to mimic the mania/psychosis associated with bipolar.**
- **Mice are injected with a mixture containing amphetamine and chlordiazepoxide and locomotor activity is measured in an open field environment.**
- **Lithium and Valproate, anticonvulsant agents used in treating bipolar in humans, can selectively attenuate amphetamine/CDP-induced hyperactivity in mice without affecting locomotor activity induced by amphetamine alone.**

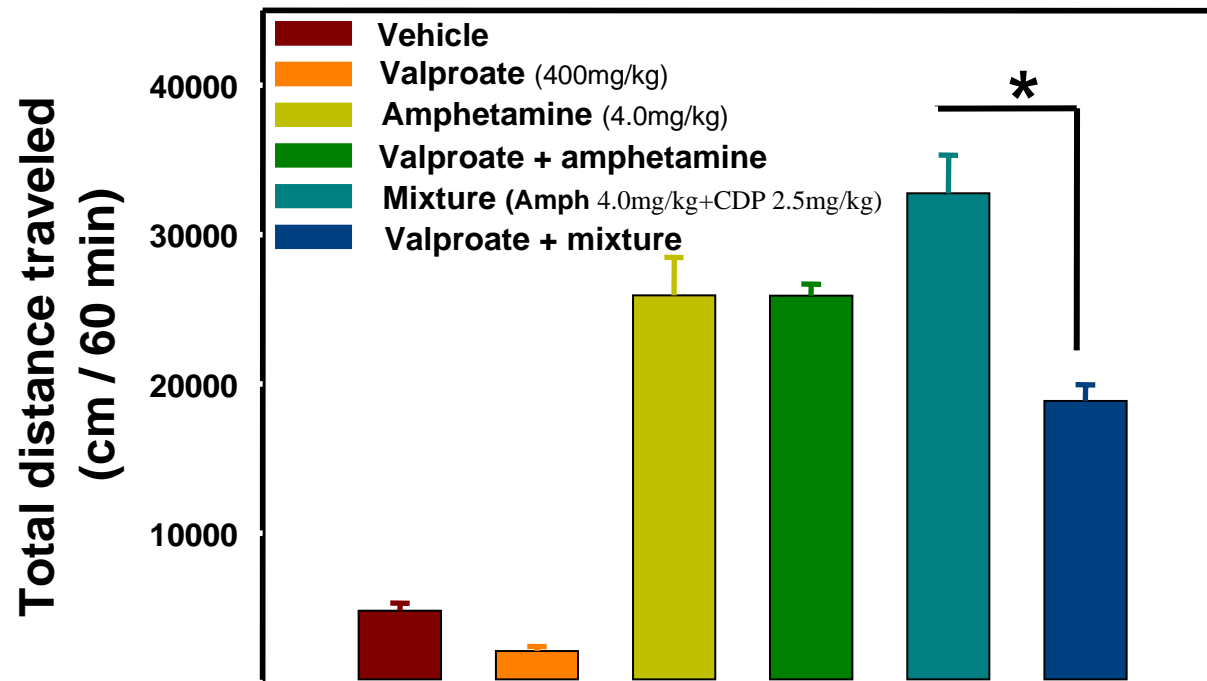
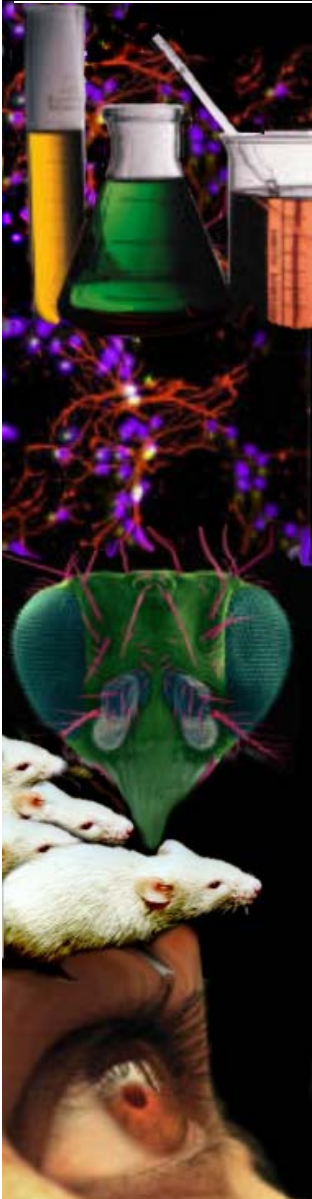
# Amphetamine / CDP Induced Hyperactivity

## Effect of valproate



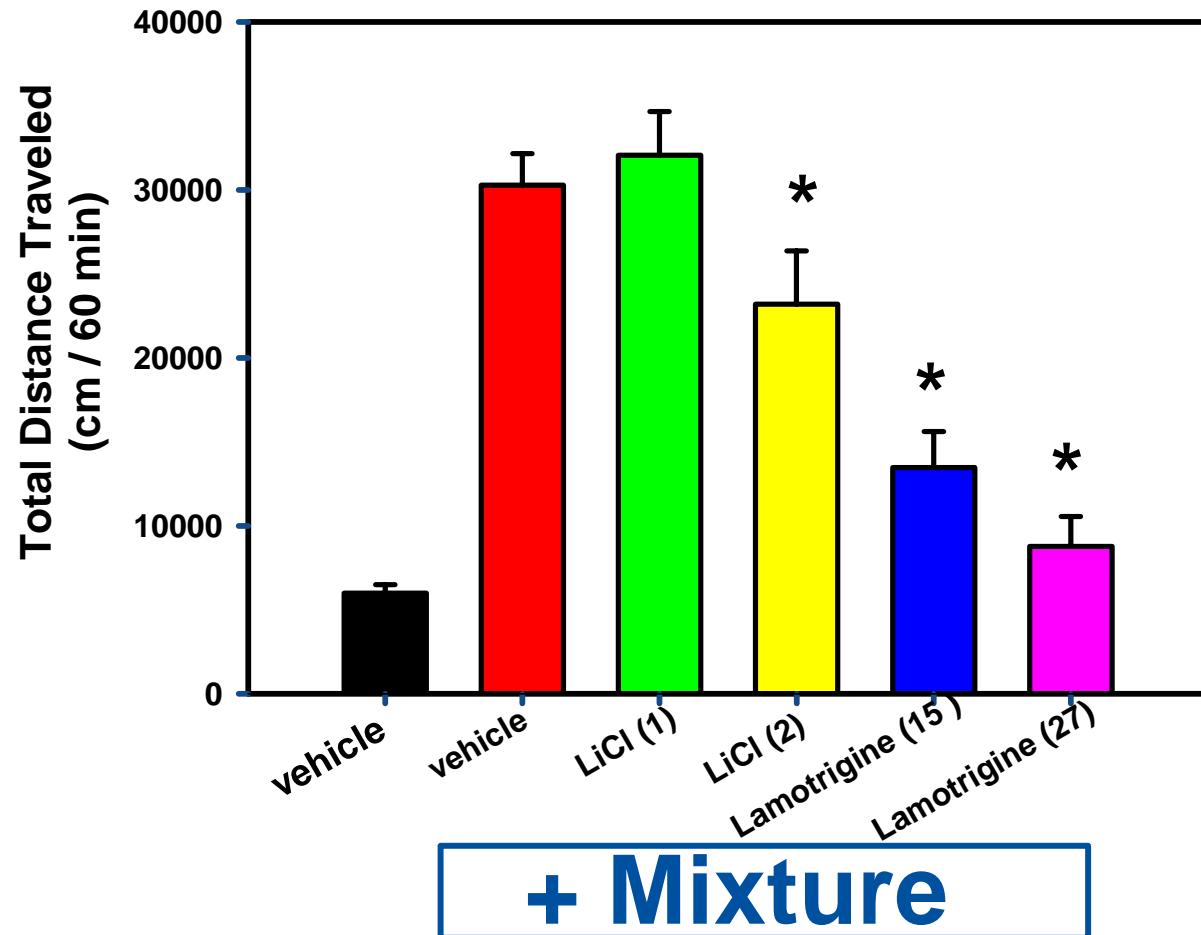
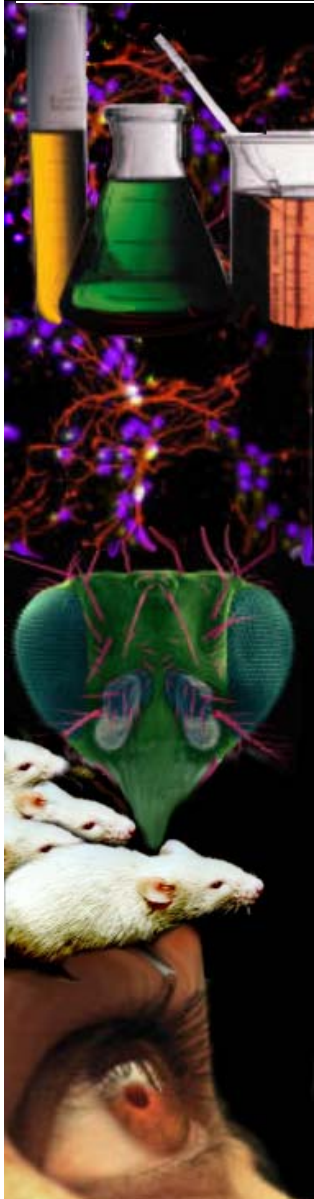
# Amphetamine / CDP Induced hyperactivity

## Effect of valproate

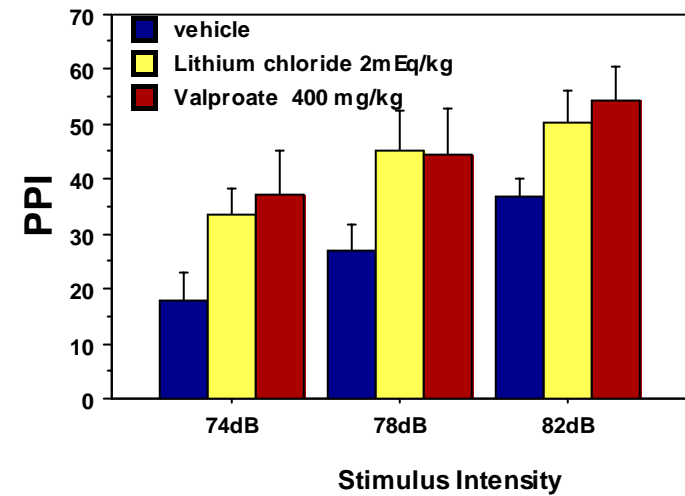
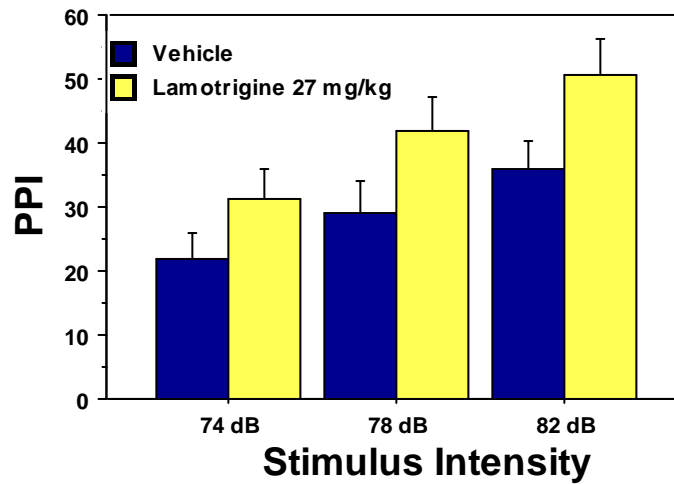
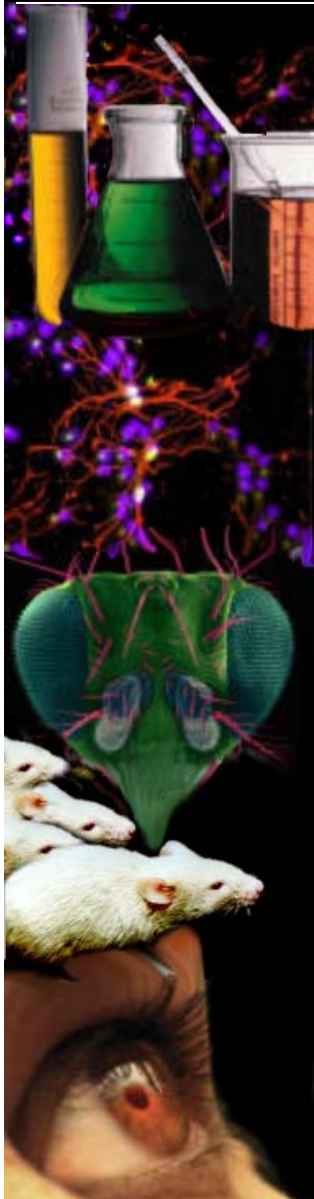


# Amphetamine / CDP Induced Hyperactivity

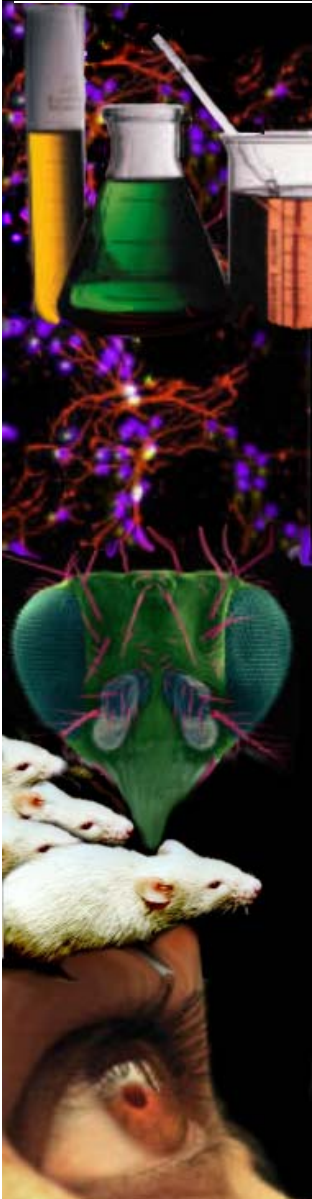
## Effect of Lithium and Lamotrigine



# PPI model of mania

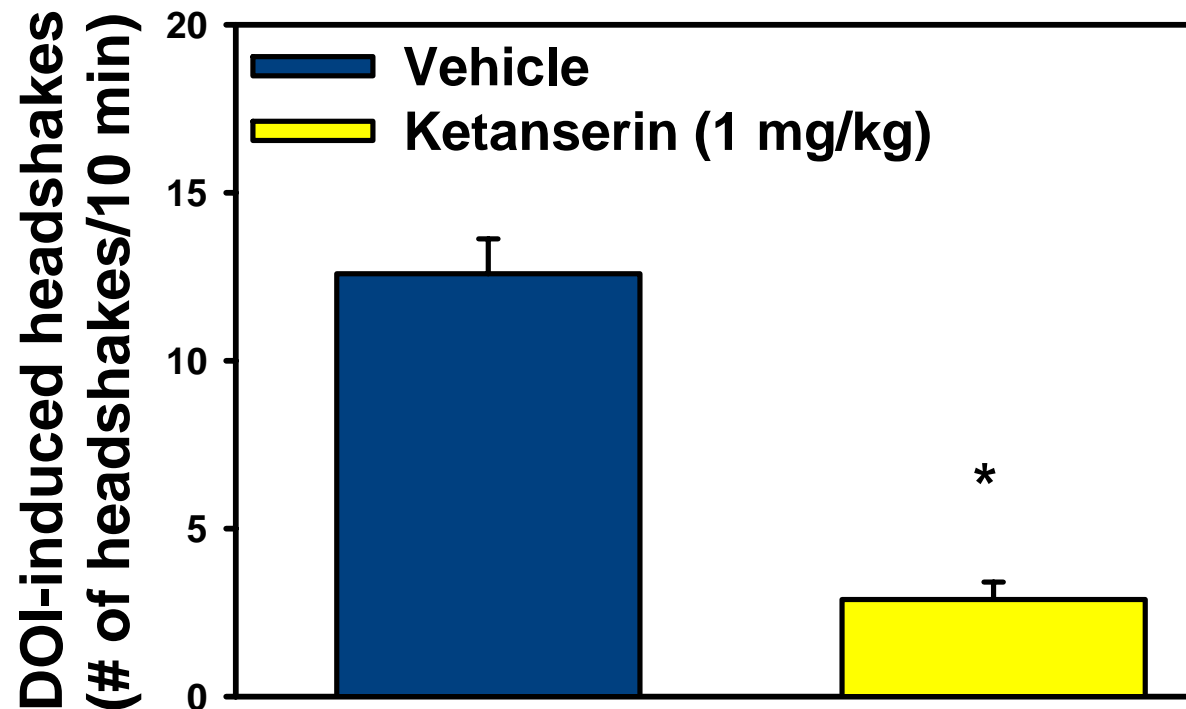
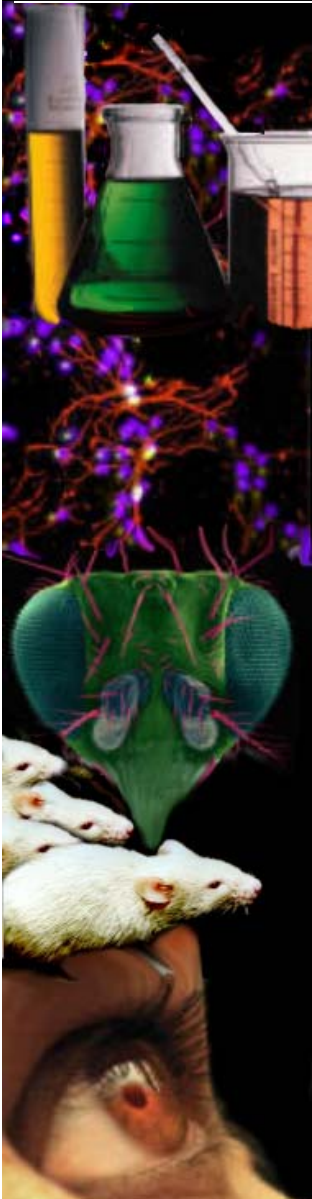


## DOI-induced headshakes



- DOI, a hallucinogen that activates 5-HT<sub>2</sub> receptors, can induced head shakes and “wet dog” shakes in rodents.
- DOI-induced headshakes in rodents used to evaluate potential antipsychotics and potential treatments for Tourette’s Syndrome.
- Mice or rats are injected with DOI and the number of headshakes or “wet dog” shakes are counted for 10 minutes.

# Ketanserin attenuates DOI-induced headshakes in rats



# Ketanserin attenuates DOI-induced headshakes in ICR mice

