



California Science Center
CALIFORNIA STATE SCIENCE FAIR
2001 PROJECT SUMMARY

Your Name (List all student names if multiple authors.) Roxane M. Santiago	Science Fair Use Only S1323
Project Title (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9) Schizophrenia: the search for cause/cure using a mouse model	Division <u>S</u> Junior (6-8) <u>S</u> Senior (9-12)
Preferred Category (See page 5 for descriptions.) 13 - Pharmacology / Toxicology	
Abstract (Include Objective, Methods, Results, Conclusion. See samples on page 14.) Use no attachments. Only text inside these boxes will be used for category assignment or given to your judges.	
<p>Stereotypy and Locomotor Activity test were performed using mouse strains NR1flox +CR1cre (mutants) and NR1flox-CA1cre (wild-type) to determine whether there is a significant difference of response to N-methyl#D-aspartate (NMDA) antagonist MK-801 and the antipsychotic agent clozapine. Reduced levels of NMDA receptors located in the brain are linked to the positive symptoms of schizophrenia such as delusions, hallucinations and disorganized behavior. Clozapine antagonizes the MK-801 induced activities in both #mutant# (reduced amount of NMDA receptors in the hippocampus) and #wild type# mice (do not lack NMDA receptors). The behavior seen in the #mutant# mice for the stereotypy counts supports the hypothesis that NMDA receptors are linked to schizophrenia and that the hippocampus is significant as well. If the hippocampal region is linked to schizophrenia then there will not be an increase or exacerbation of behavior when mutants are given NMDA antagonist. However the data from the locomotor activity experiments show that there is an increase or exacerbation of activity for mutant mice when given MK-801; thus suggesting that schizophrenia is not directly a result of a decrease in NMDA receptors in the hippocampus but has other origins as well.</p>	
Summary Statement (In one sentence, state what your project is about.) Stereotypy and Locomotor Activity test were performed using mouse strains NR1flox +CR1cre (mutants) and NR1flox-CA1cre (wild-type) to determine whether there is a significant difference of response to N-methyl#D-aspartate (NMDA)	
Help Received in Doing Project (e.g. Mother helped type report; Neighbor helped wire board; Used lab equipment at university X under the supervision of Dr. Y; Participant in NSF Young Scholars Program) See Display Regulation #8 on page 4. worked at the Salk Institute for Biological Studies under the mentor Dr. Bryce Vissel in the neurobiology	