Seattle Children's
HOSPITAL + RESEARCH + FOUNDATION

# SUMMER NEUROSCIENCE 2011

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# RAMIREZ LAB

- Mentor: Atsushi Doi, Ph.D
  Project: Effects of Acute Intermittent Hypoxia (AIH) in Swiss CD-1 Wild Mice

*Hypoxia*: A deficiency of Oxygen reaching the tissues of the body
(Miriam Webster)

Why AIH?
By observing and analyzing the effects AIH in CD-1 Mice, we can learn more about Sudden Infant Death Syndrome (SIDS). In particular, postnatal age influence on AIH induced apnea.

*Apnea*: Transient cessation of respiration
(Miriam Webster)

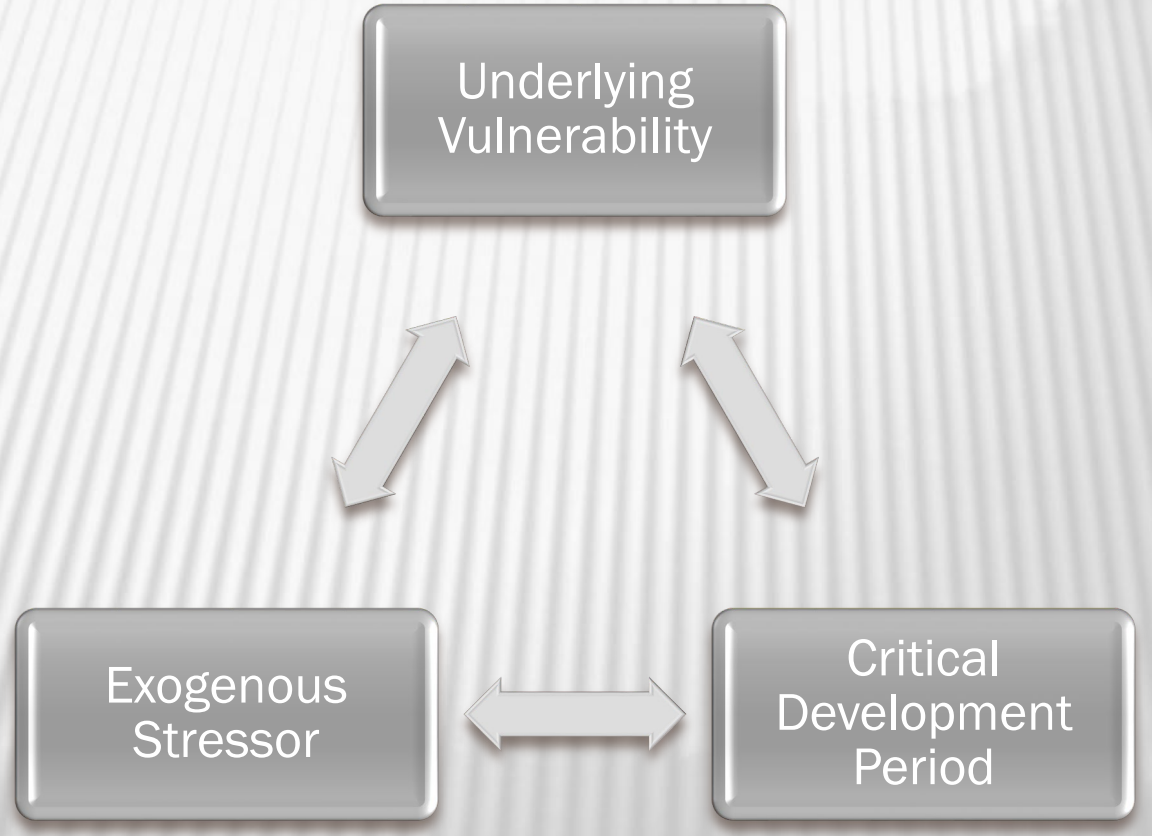
# SIDS

- "A sudden death of an infant or young child, which is unexpected by history, and in which a thorough post mortem examination fails to demonstrate an adequate cause of death" –National Institute of Health (NIH), 1969

- Occurs usually between 2-4 months of age
- Male predominance, excess risk in US for boys is a constant 50% (Ratio of boys to girls, 3:2)

# TRIPLE-RISK MODEL (1994)

- SIDS occur when three factors are present simultaneously



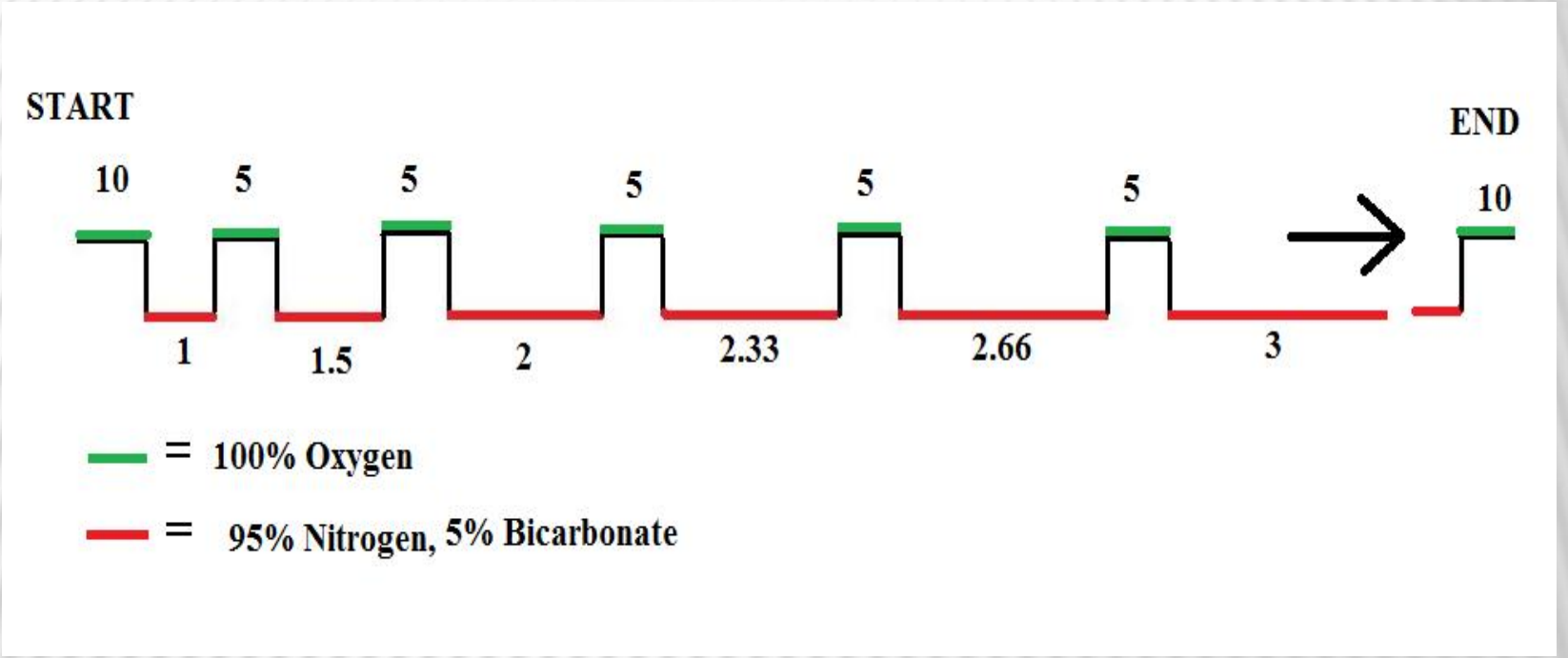

## Setup

1. Anesthetize CD-1 Mouse according to weight and age with Urethane

2. Place CD-1 Mouse in supine position

3. Insert recording Electrodes

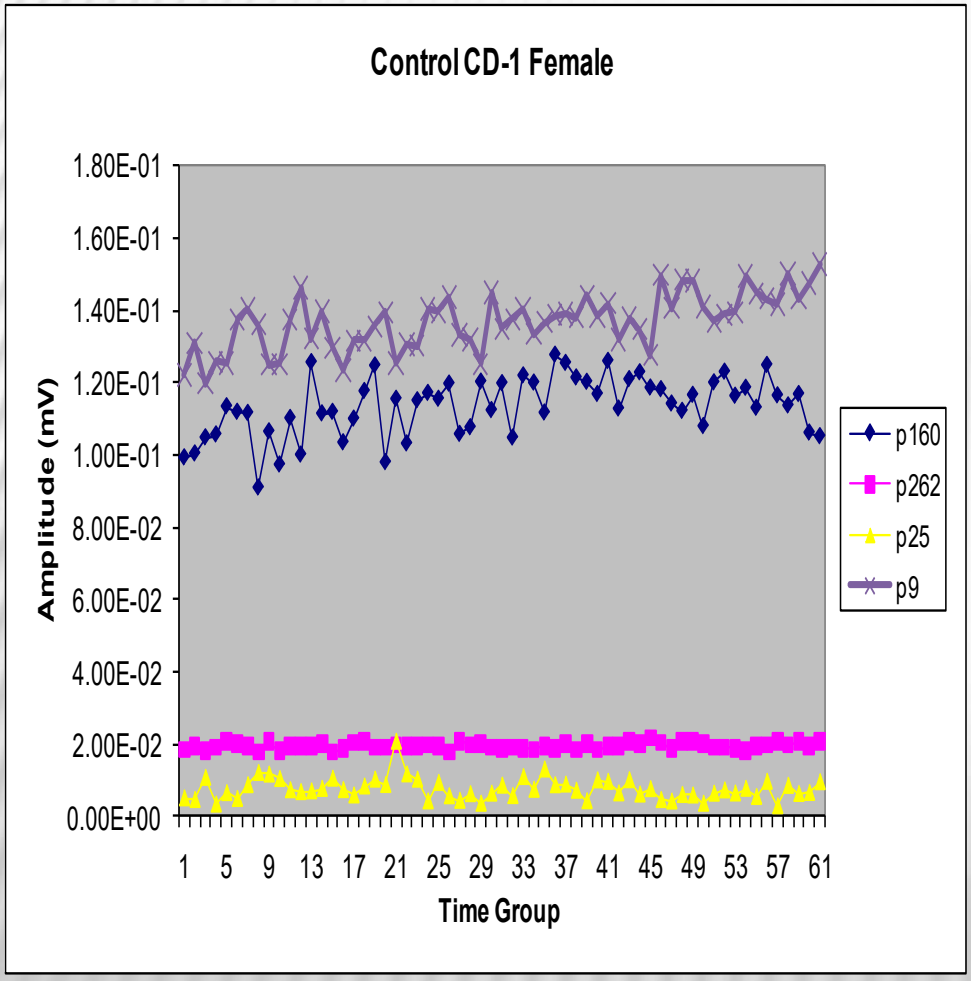
# LAB PROTOCOL

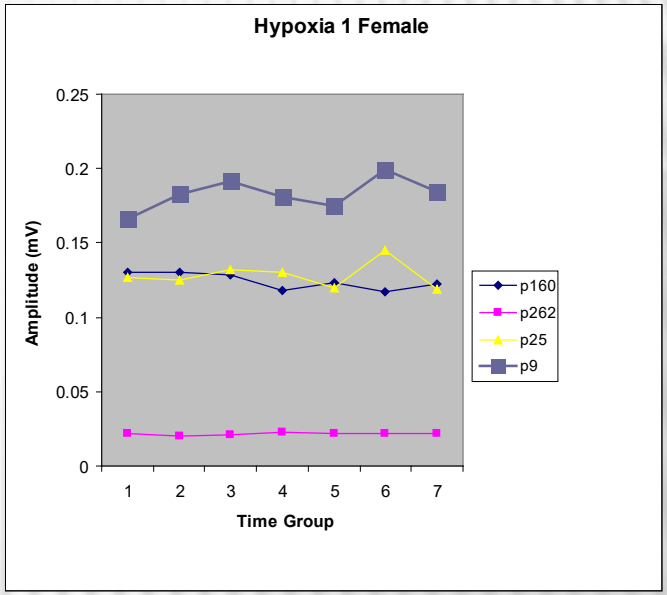


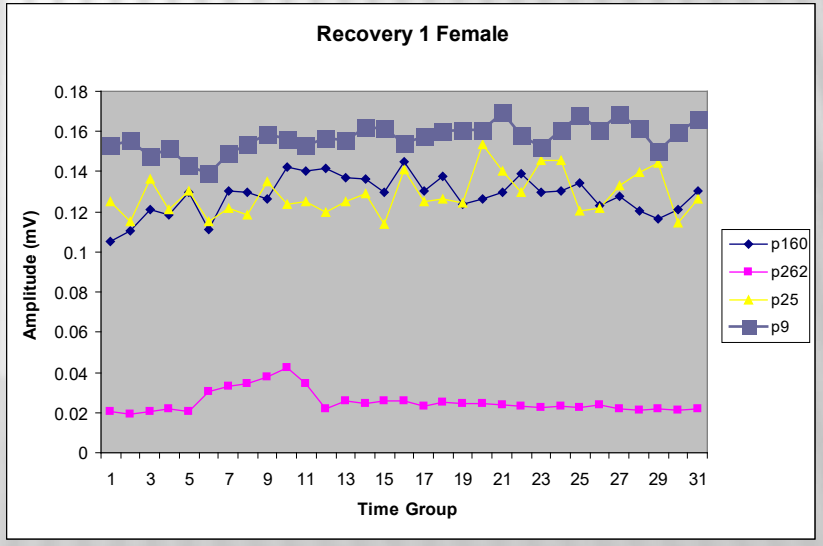

Female: p262, p160, p25, p9

Male: p230, p21, p9

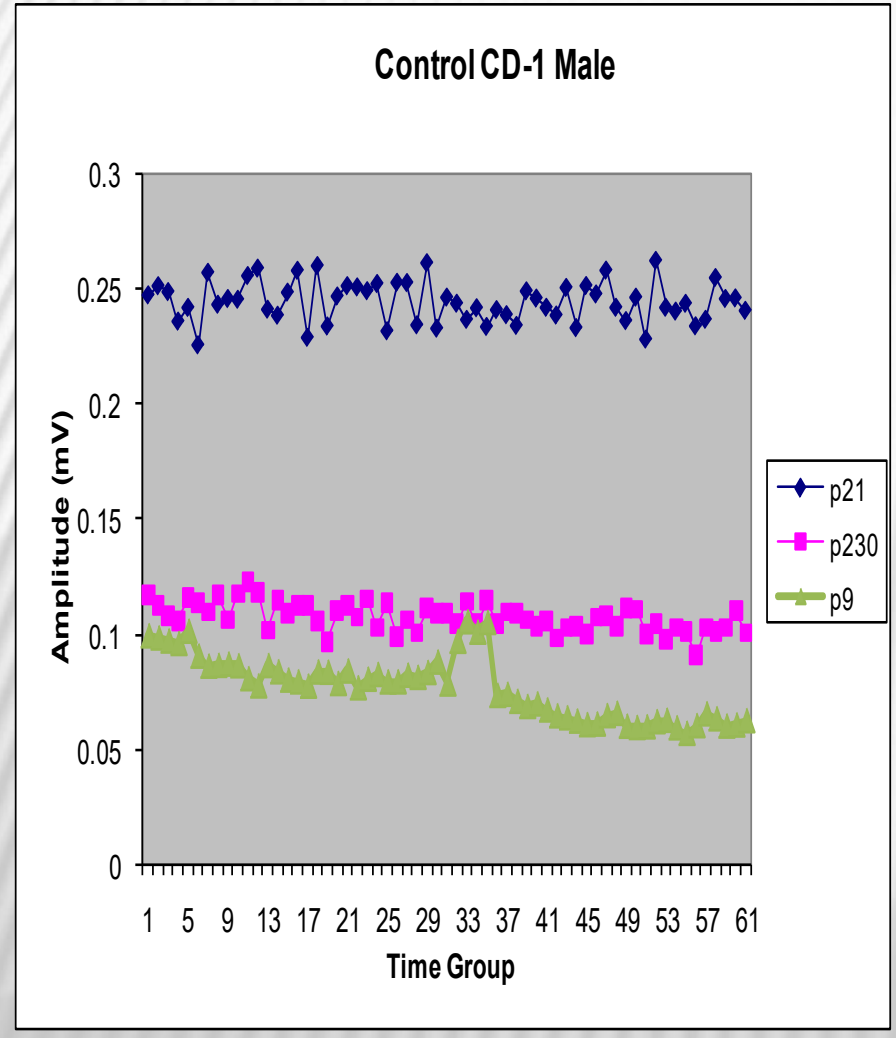
# CD-1 Female Mice

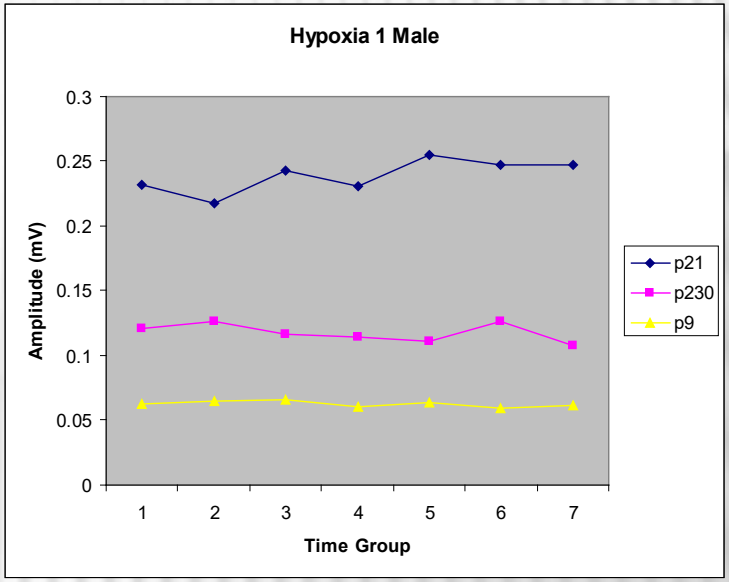


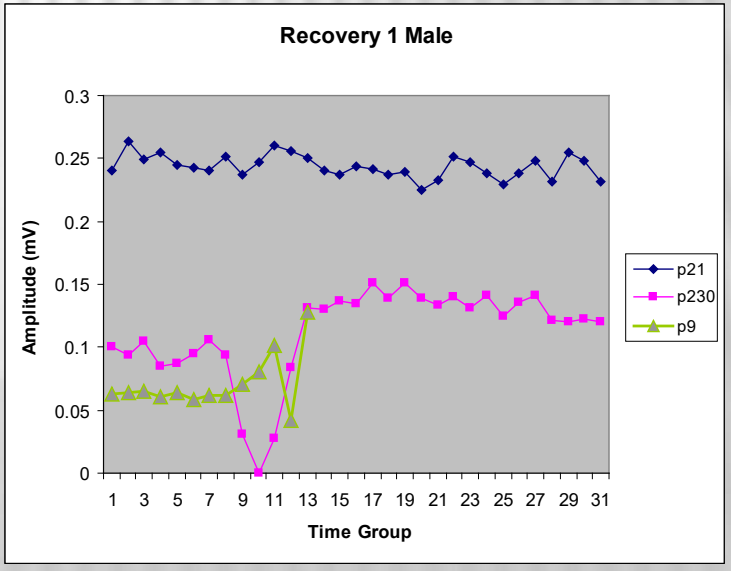



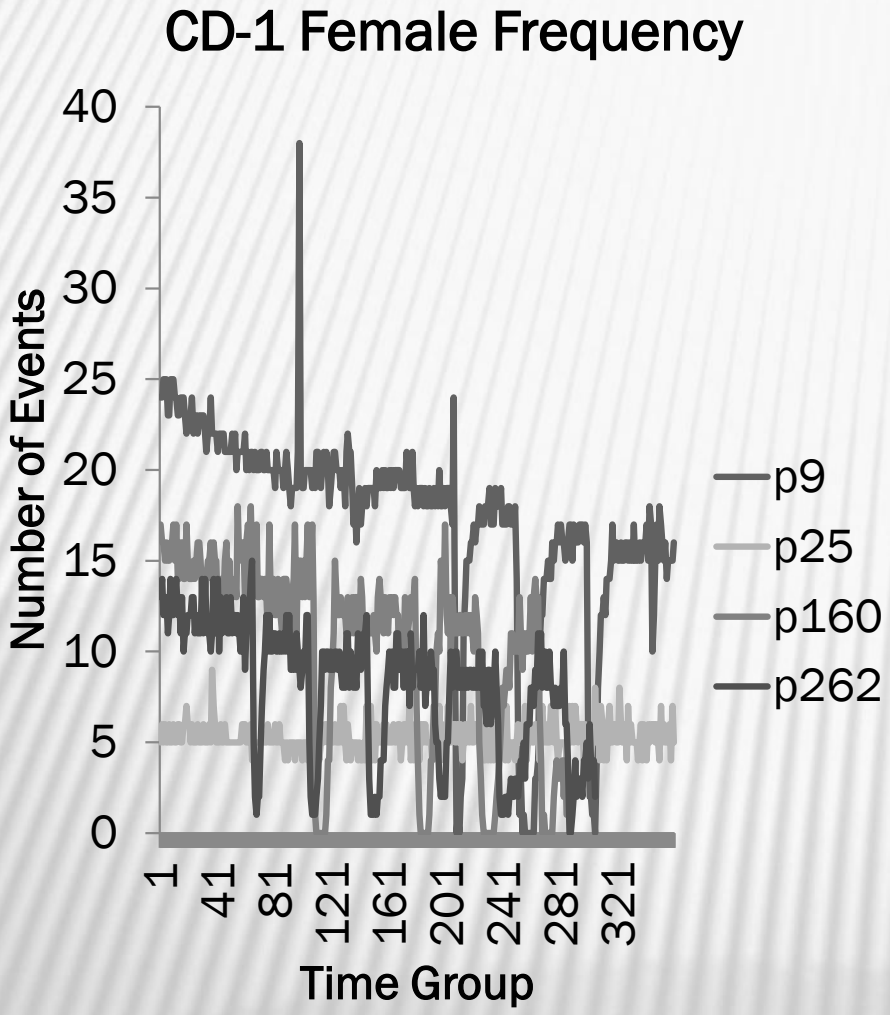



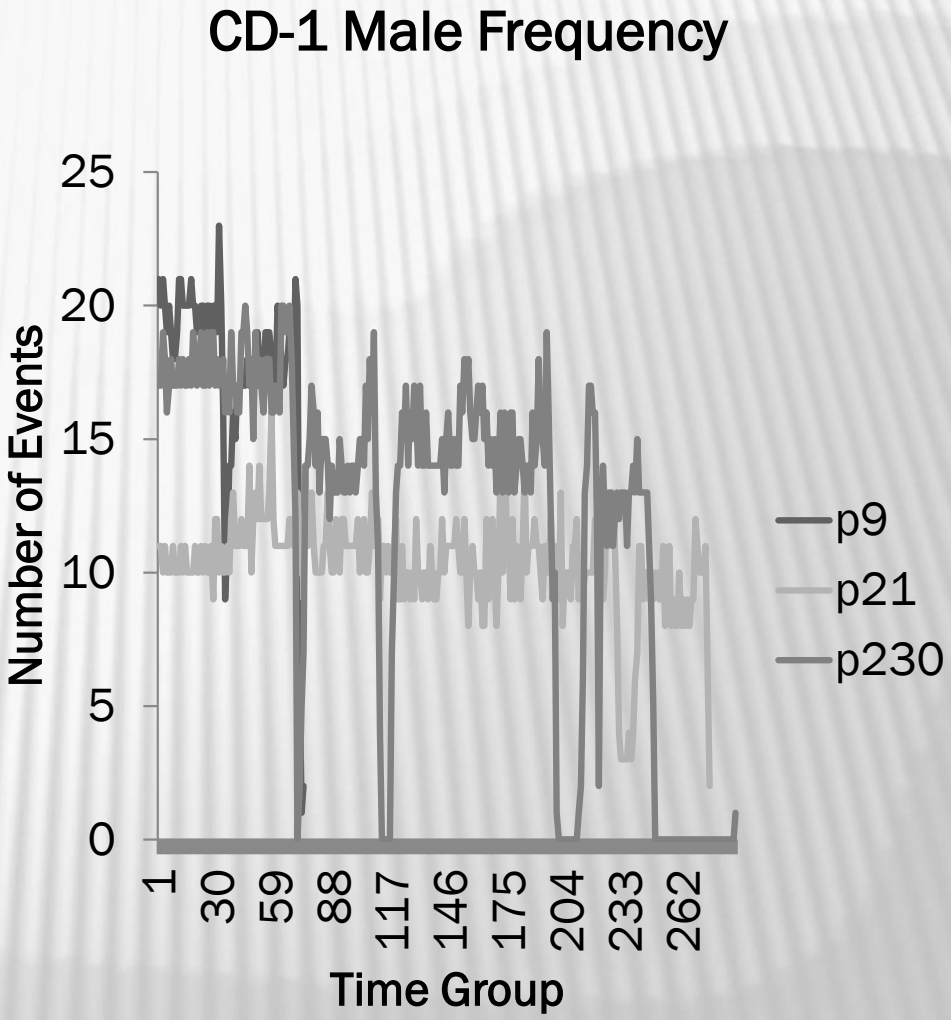
# CD-1 Male Mice




CD-1 Female Frequency
Number of Events
40
35
30
25
20
15
10
5
0
1
41
81
121
161
201
241
281
321
Time Group
p9
p25
p160
p262


CD-1 Male Frequency
Number of Events
25
20
15
10
5
0
1
30
59
88
117
146
175
204
233
262
Time Group
p9
p21
p230

Thank You to:

- Ramirez Lab (Dr. Ramirez, Dr. Doi, Dr. Koch, Dr. Garcia)
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