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Effects of Acute Stress and Ethanol Consumption on IL-1β in Female Long Evans Rats: A Pilot Study

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Purpose
To serve as a preliminary investigation on the effects of various acute stressors and ethanol (EtOH) consumption/preference on plasma levels of Interleukin-1Beta (IL-1β) in female subjects.

Hypothesis
- The acute stressors will independently increase plasma levels of IL-1β following each stressor
- Alcohol consumption will decrease plasma IL-1β levels (as compared to subject’s baseline levels)
- Adolescent subjects will show a greater response to both the acute stressors and EtOH consumption

Methods
Subjects: Adolescent (N=6) and adult (N=6) female Long Evans Rats

Acute Stressors: Swim Stress (SS), Elevated Platform with High Light (EP-HL), and Predator Odor (PO)

Ethanol Paradigm: 20% EtOH, 2 Bottle Choice Design
- Access on Mondays, Wednesdays, and Fridays
- Bottle alternation on each drinking day
- Consumption recorded after 30 min. and 24 hrs.

Results
For both adolescent and adult subjects, no significant differences were found between the pre and post stressor levels of IL-1β.

*At the 24 hour time point adolescent aged rats consumed more EtOH than adult rats. *At the 30 minute time point adolescent rats showed a greater preference for EtOH than adult rats.

Conclusions
As a preliminary study, no conclusive deductions may be made based on this data set alone. Future research is thus required to reevaluate these parameters using a larger cohort (N>12) and a proper control group so that a more reliable assessment may be made.

2 week EtOH consumption was not found to have a significant impact on plasma levels of IL-1β for adolescent or adult subjects.