**POSTER #1**

**SPEXIN REDUCES ETHANOL CONSUMPTION IN MICE.**

Michael Chang, José L. Walewski, Dieunine Anglade, and Paul D. Berk.

Division of Digestive and Liver Diseases, Department of Medicine,

Columbia University Medical Center, New York, NY 10032.

**BACKGROUND:**Spexin is a novel adipokine that produces weight loss when injected into obese (DIO) mice. Its mechanisms of action include central effects, e.g. *appetite suppression*, mediated by the GALR2 receptor, & local inhibition of long chain fatty acid (LCFA) uptake by adipocytes. Galanin is a related adipokine that, by interacting with GALR2, *increases appetite* for fatty foods and *stimulates EtOH intake*. We have shown that spexin‘s appetite-reducing effects reflect competition with galanin for binding to GALR2, suggesting that galanin’s stimulatory effects on EtOH intake might also be reduced by spexin.

**METHODS:** Accordingly, 5 groups of 5 male C57BL/6J mice were housed in cages with 2 water bottles: one for H2O & the other 10% EtOH in H2O (10% EtOH). Fluid intake was recorded daily. Starting on day 31, 15 mice received spexin for 3 days (25 µg/kg in PBS i.p. daily); the other 10 received PBS alone.

**RESULTS:** Over week 1, 10% EtOH & H2O & were consumed at a mean EtOH:H2O ratio of 0.80±0.32:1.0. 10% EtOH intake then increased, plateauing at a 10% EtOH:H2O ratio of 2.0±0.17:1.0 by days 22-30. This was designated as baseline (100%) for subsequent studies.

Over the 3 days of injections, the 10% EtOH:H2O ratio did not change in the PBS group, ranging from 92-95% of baseline, but fell rapidly in the spexin group from 100% to 80.7, 42.4, & 42.4% (p=0.02, 0.02, and 0.03) during spexin administration (days 31-33), rebounding to 100% & 136% in the first 2 days post-spexin.

**CONCLUSION:** Offered free choice, C57BL/6J mice consume ~200% as much 10% EtOH as H2O, but daily spexin injections rapidly & significantly reduce EtOH intake in these mice. The data support our hypothesis that spexin would decrease EtOH intake by competing with galanin for binding to GALR2, and may have implications for treatment of EtOH abuse in man.

**CONTENT CATEGORY:** Basic Science

**KEYWORDS:** *Ethanol Consumption, Galanin, Spexin, Obesity*