

INIA-Neuroimmune

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<h2>CORES</h2>		
<p>Target Validation Electrophysiology Core Richard Morrisett, Regina Mangieri UT Austin</p>	<p>Administrative Core R. Adron Harris, UT Austin Marisa Roberto, Scripps Gregg Homanics, U Pitt</p>	<p>Rat Animal Models and Drug and Gene Testing Core Richard Bell, Sheketha Hauser IU Sch Med</p>
<h2>RESEARCH COMPONENTS</h2>		
<p>Mapping the Transcriptome of Excessive Alcohol Consumption Robert Hitzemann, Dan Iancu (OHSU)</p>	<p>Electrophysiology of Alcohol in Extended Amygdala Marisa Roberto, Michal Bajo, Amanda Roberts (Scripps)</p>	
<p>Alcohol-Related Changes in Gene Expression and Structure Using Next Generation Sequencing R. Dayne Mayfield, Sean Farris, Igor Ponomarev (UT Austin)</p>	<p>Pharmacology and Neurobiology of Binge Drinking: HDID Mice John Crabbe, Angela Ozburn (OHSU)</p>	
<p>Role of Non-coding RNA in Alcohol Action Gregg Homanics (U Pitt)</p>	<p>From Alcohol Genes to Brain Connectivity Networks: Translational Neuroimaging Brigitte Kieffer (McGill Univ)</p>	
<p>ALK and Midkine as Novel Neuroimmune Regulators of Alcohol Consumption Amy Lasek (UIC)</p>	<p>Neuroimaging of Alcohol-Induced Neuroadaptation: Translation from Animals to Humans Dolf Pfefferbaum (SRI), Natalie Zahr (Stanford)</p>	
<p>Biochemical and Genetic Determinants of Alcohol Consumption Yuri Blednov, Robert Messing (UT Austin)</p>	<p>Proof-of-Concept Human Laboratory Testing of Novel Drug Candidates Identified by INIA-Neuroimmune Barbara Mason (Scripps)</p>	

INIA-Neuroimmune Gene Targets

Genes	Descriptions	Investigators
<i>Alk</i>	Anaplastic lymphoma kinase	Lasek, Bell, Roberto, Morrisett
<i>Azi2 (Nap1)</i>	5-azacytidine-induced protein 2	Bell
<i>Btk</i>	Bruton tyrosine kinase	Crabbe
<i>Camk2g</i>	Calcium/calmodulin-dependent protein kinase type II subunit gamma	Hitzemann
<i>Crh</i>	Corticotropin-releasing factor	Roberto, Pfefferbaum, Bell
<i>Fkbp5</i>	FK506 binding protein 5	Roberto
<i>Gpr88</i>	G protein-coupled receptor 88	Kieffer
<i>Grm2</i>	Glutamate receptor, metabotropic 2	Hitzemann, Lasek
<i>Grm8</i>	Glutamate receptor, metabotropic 8	Homanics
<i>Hmgb1</i>	High mobility group box 1	Lasek
<i>Hpgd</i>	Hydroxyprostaglandin dehydrogenase 15-(NAD)	Hitzemann
<i>Htr7</i>	Serotonin receptor 7	Homanics
<i>Ifn1</i>	Interferon-1	Blednov
<i>Ikkb/Ikke</i>	Inhibitor of nuclear factor kappa B kinase subunit beta and subunit epsilon	Blednov
<i>Il1b</i>	Interleukin 1-beta	Bell, Roberto
<i>Il1rn</i>	Interleukin 1 receptor antagonist	Roberto
<i>Il6/10</i>	Interleukin 6 and 10	Bell, Roberto
<i>Mdk</i>	Midkine	Bell, Lasek, Roberto, Morrisett
<i>Oprd1</i>	delta-opioid receptor	Kieffer
<i>Oprm1</i>	mu-opioid receptor	Kieffer
OR1-5	lncRNAs (OHSU, Hitzemann)	Homanics, Hitzemann
<i>Pde4</i>	Phosphodiesterase 4	Roberto, Blednov, Crabbe, Kieffer, Pfefferbaum, Mason, Bell
<i>Pde10a</i>	Phosphodiesterase-10a	Hitzemann
<i>Ppar</i>	Peroxisome proliferator-activated receptors (alpha and gamma)	Mason, Blednov, Hitzemann, Bell
<i>Ptp4a1</i>	Protein tyrosine phosphatase type IVA, member 1	Homanics
<i>Socs1/4</i>	Suppressor of cytokine signaling 1 and 4	Roberto
<i>Tlr1/2/3/6</i>	Toll-like receptors 1, 2, 3, and 6	Bell, Homanics, Blednov
<i>Trif</i>	TIR-domain adapter interferon	Blednov
TX1-5	lncRNAs (UT Austin, Mayfield)	Homanics, Mayfield

INIA-Neuroimmune Drinking Tests

Standard Name	Description
2BC (Two-bottle choice)	1 bottle of water vs. 1 concentration of ethanol
3BC (Three-bottle choice)	1 bottle of water vs. 2 concentrations of ethanol
2BC-Tastant	Tastant vs. water (preference or avoidance)
DID (Drinking-in-the-dark)	1 bottle of ethanol early in circadian dark cycle (classic mouse DID starts 3 h into dark cycle; rat DID starts at lights out)
DID-2BC	1 bottle of water vs. 1 concentration of ethanol early in circadian dark cycle
DID-3BC	1 bottle of water vs. 2 concentrations of ethanol early in circadian dark cycle
EOD (Every other day)	Every other day access to ethanol
EOD-2BC	Every other day access to ethanol vs. water
EOD-3BC	Every other day access to 2 concentrations of ethanol vs. water
CIE (Chronic intermittent ethanol)	Classic Becker model: daily drinking for 4-6 weeks, 15% ethanol (2-h DID-2BC); followed by 4 days of 16 h/day vapor (or air) inhalation with 8 h recovery; then water only for 3 days; then 5 days DID-2BC post-dependence test. Cycle is repeated 1-3 more times.
CIE-FSS	Becker model with forced swim stress before post-vapor drinking tests
DWA (Dependence with abstinence)	Liquid diet containing 4% ethanol vs. control liquid diet with equicaloric sucrose substituted for ethanol (continuous access)

Prioritization and Testing of Drug Candidates

