

"Therapeutic Potential of Kappa Opioids in Pain and Addiction"
Edgewater Hotel and Conference Center
Seattle, WA July 10-13, 2011

SUNDAY July 10, 2011 Registration 12-5 PM in Foyer, Opening reception 4-6 PM in Lobby Bar

MONDAY July 11, 2011

7-8 AM **Continental Breakfast / Registration** (Terrace Room 4th floor)

8:15 AM **Welcome (Charles Chavkin, Program Chair)** (Olympic Ballroom)

Oral Session 1 **Medicinal Chemistry (Charles Chavkin, Session Chair)** (Olympic Ballroom)

8:30 Carroll FI, Rehder K, Fennell TR, Pollard GT, Howard JL. **Does the duration of action of the antagonism of kappa agonist-induced diuresis by kappa opioid receptor antagonists depend on their pharmacokinetic properties?**

8:50 Mitch C, Quimby S, Diaz N, Pedregal C, De La Torre M, Shi Q, McKinzie D, Statnick M, Rash K, Barth V. **Discovery of Kappa Selective Opioid Receptor Antagonists: Application to Preclinical Evaluation of New Receptor Occupancy Tracers.**

9:10 Melief EJ, Miyatake M, Carroll FI, Béguin C, Potuzak JA, Carlezon Jr WA, Cohen BM, Grimwood S, Mitch CH, Rorick-Kehn L, Chavkin C. **Duration of action of a broad range of selective kappa opioid receptor antagonists is positively correlated with c-Jun N-terminal Kinase-1 activation.**

9:30 Prisinzano TE, Aubé J, Hedrick MP, Gosalia P, Frankowski K, Shi S, Schoenen F, Su Y, Vasile S, Sergienko E, Gray W, Hariharan S, Slausen S, Ghosh P, Milan L, Heynen-Genel S, Chung TDY, Caron M, Bohn LM Barak LS. **Discovery and preliminary evaluation of five new kappa opioid receptor antagonist and agonist scaffolds.**

9:50 Husbands SM, Cueva JP, Kumar V, Clark M, Traynor JR. **Selectively promiscuous kappa opioid receptor antagonists.**

10:10 Aldrich JA, Kulkarni SS, Senadheera SN, Patkar KA, Ross NC, Reilley KJ, Eans S, Ganno ML, Zhang Y, Kreek MJ, McLaughlin JP. **Peptide Kappa Opioid Receptor Ligands: Challenges in Development and Successes.**

10:30-11AM **Discussion / Morning Coffee Break** (Terrace Room)

11:00 Cashman JR, Ghirmai S, Kalisiak J, Azar MR, Wee S, Koob G. **Efficacious kappa antagonists for decreasing cocaine and alcohol self-administration.**

11:20 McCann D. **The discovery and development of JDTic: A NIDA perspective**

11:40 Zjawiony JK, Polepally PR, Setola V, Vardy E, and Roth BL. **Michael acceptor approach to the design of new salvinorin A - based high affinity ligands to the kappa-opioid receptor.**

12:00-2:00 PM **Buffet Lunch** (Terrace Room)

Oral session 1 (con't) (Ivy Caroli & Alan Cowan, Session Co-Chairs)

2:00 Neumeyer JL, Sromek AW, Zhang T, Bidlack JM. **Aminothiazole-modified morphinans with potent kappa and mu activity.**

2:20 Kivell BM, Morani A, Simonson B, Prisinzano T, Shippenberg TS, Miller JH, Schenk S, **Anti-addiction effects of Salvinorin A and novel analogues.**

2:40 – 4:00 **Medicinal Chemistry Workshop** (Data blitz – 1 slide per speaker) (Olympic Ballroom)

Additional speakers are invited to volunteer. As of 6/20, the following participants are listed:

John E. Mendelson, "Human Trials with Salvinorin A"

Jordan K. Zjawiony, "Salvinorin-based affinity labels for KOR"

Philip D. Mosier, "KOR-selective *N*-alkyl-octahydroisoquinolin-1-one-8-carboxamide agonists"

Stephen M. Husbands, "Selectively promiscuous kappa agonists"

Ron Dolle, "Medicinal chemistry of peripheral KOR agonists"
John R. Cashman, "Decreasing hepatotoxicity of kappa antagonists"

4:00 – 6:00	Poster Session / Wine & Cheese	(Cascade Ballroom 2 nd floor)
7-9 PM	Dinner (no host)	(Local Restaurants, walk or short cab ride)
9-11 PM	Informal discussion in Pub	(Lobby Bar)

TUESDAY July 12, 2011

7-8:15 AM	Continental Breakfast	(Terrace Room)
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Oral Session 2:	Addiction Models & Treatment (Toni Shippenberg, Session Chair)	(Olympic Ballroom)
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8:15 Koob G. **A conceptual framework for the role for dynorphin in the motivational effects of drug dependence.**

8:30 Maldonado R. **Involvement of kappa opioid receptors in drug addiction**

8:50 Damaj MI, Carroll FI, Negus SS, Jackson KJ. **Effect of kappa opioid receptor antagonists in mouse models of nicotine dependence.**

9:10 Smith JS, Schindler AG, Gustin RM, Bruchas MR, Neumaier JN, Chavkin C. **Kappa opioid receptor antagonists: a promising pharmacotherapy to treat stress-induced increase in nicotine reward and dependence**

9:30 Walker BM. **The role of extended amygdala kappa-opioid receptors in escalated operant ethanol self-administration during acute withdrawal in ethanol-dependent rats.**

9:50 Rorick-Kehn L, Crile R, Eberle E, Shannon H, Sahr A, McKinzie J, Statnick M, Need A, Hart J, Li X, Witkin J, Kahl S, Quimby S, Diaz N, Mitch C, McKinzie D. **Preclinical pharmacological characterization of a structurally-unique, potent, kappa opioid receptor antagonist, (S)-3-fluoro-4-(4-((2-(3-fluorophenyl)pyrrolidin-1-yl)methyl)phenoxy)benzamide (FP3FBZ) in animal models of alcohol dependence and mood disorders**

10:10 McLaughlin JP, Ganno ML. **Kappa opioid receptor signaling mediates stress-induced reinstatement and potentiation of ethanol seeking behavior.**

10:30-11AM	Discussion / Morning Coffee Break	(Terrace Room)
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11:00 Schlosburg JE, Vendruscolo LF, Park PE, Whitfield TW, & Koob GF. **Long-term antagonism of kappa opioid receptors prevents escalation of, and increased motivation for, heroin intake.**

11:20 Whitfield Jr. TW, Wee S, Gould AT, Schlosburg JE, Vendruscolo LF, Koob GF. **Kappa Receptor Activation Underlies Compulsive Methamphetamine Intake**

11:40 Saxon AJ, Mooney LJ, Ling W. **Cocaine Use Reduction with Buprenorphine (CURB)**

12:00-2 PM	Buffet Lunch	(Terrace Room)
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Oral Session 3:	Pain, Inflammation & Epilepsy (Alan Cowan, Session Chair)	(Olympic Ballroom)
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2:00 Ko MC. **The role of kappa opioid receptor in the modulation of pain and itch in primates.**

2:20 Stein C. **Peripheral kappa receptors mediating antinociceptive and anti-inflammatory effects.**

2:40 Menzaghi F. **Analgesic and morphine-sparing effects of the kappa opioid agonist CR845 after IV administration in women undergoing laparoscopic hysterectomy.**

3:00 Spencer R. **Anti-inflammatory effects of the peripheral kappa opioid receptor agonist CR845: a novel approach for the treatment of inflammatory disease.**

3:20 **Discussion / Afternoon Coffee Break**

3:40 Cowan A, Menzaghi F, Spencer RH, Inan S. **Kappa opioid receptor ligands and the development of antipruritics.**

4:00 Dolle RE. **Discovery and Pharmacological Evaluation of Putative Peripheral Kappa Opioid Agonists ADL0101 and ADL0116.**

4:20 Schwarzer C, Schunk E, Loacker S. **The dynorphin / kappa opioid receptor system in temporal lobe epilepsy.**

4:40 Bruchas MR, Schindler A, Shankar H, Messinger D, Miyatake M, Land BB, Lemos JC, Hagan C, Neumaier JN, Quintana A, Palmiter RD, Chavkin C. **Biased signaling at Kappa-opioid receptors distinguishes analgesic from dysphoric behavioral responses.**

5:00-6:30 PM **Discussion / Wine & cheese** (Terrace Room)

7-9 PM Dinner (no host) (Local Restaurants, walk or short cab ride)

9-11 PM Informal discussion in Pub (Lobby Bar)

WEDNESDAY July 13, 2011

7-8:15 AM **Continental Breakfast** (Terrace Room)

Oral session 4: **Kappa Regulation of Amine Function: Implications for Behavior** (Olympic Ballroom)
(Howard Fields, Session Chair)

8:30 Shippenberg, T, Sitte, H, Kivell, B, Chefer, V, Ramamoorthy S. **Kappa Opioid Receptor Regulation of Dopamine Transporter Function: Cellular Mechanisms and Physiological Relevance.**

8:50 Ramamoorthy S, Mannangatti P, Jayanthi LD Shippenberg T. **Kappa-Opioid Receptor- Mediated Regulation of Serotonin Transporter Function, Trafficking, Phosphorylation and Protein-Protein Interactions.**

9:10 Schindler AG, Shankar H, Messinger D, Miyatake M, Gustin RM, Hagan C, Neumaier JN, Chavkin C. **Stress-induced activation of the dynorphin/kappa opioid system increases serotonin reuptake through a p38alpha MAPK mechanism and underlies prodepressive and proaddictive responses.**

9:30 Valentino RJ, Van Bockstaele EJ. **Regulation of the rat brain norepinephrine system by the dynorphin-kappa opiate receptor system.**

10:00-10:30 **Discussion / Morning Coffee Break** (Terrace Room)

Oral Session 5: **Stress, Affect, Cognitive Function and Treatment** (Olympic Ballroom)
(Howard Fields, Session Chair)

10:30 Carlezon Jr. WA. **Roles for dynorphin and kappa-opioid receptors in the effects of stress.**

10:50 Chartoff E, Sawyer A, Rachlin A, Potter D, Pliakas A, Carlezon Jr. WA. **Blockade of kappa-opioid receptors attenuates cocaine withdrawal-induced negative affective states.**

11:10 Lucki I, Carr GV, Bangasser D, Valentino RJ. **Antidepressant-like Effects of Kappa Opioid Receptor Antagonists and Buprenorphine in WKY Rats.**

11:30 Kreek MJ, Zhang Y, Schlussman S, Zhou Y, Butelman B. **Bidirectional translational research of the kappa opioid receptor and dynorphin systems: Implications for human disease and therapeutics**

11:50 Yuferov V, Ho A, Morgello S, Proudnikov D, Levran O, Kreek MJ. **Human molecular genetics of *PDYN* and *OPRK1* and expression of those genes and chemokine receptors in postmortem brain of HIV infected and HIV negative subjects.**

12:00-2:00 PM **Buffet Lunch** (Terrace Room)

Oral Session 6 **Cellular & Molecular Receptor Mechanisms** (Olympic Ballroom)
(Bill Carlezon, Session Chair)

- 2:00 Vukojević V, Ming Y, Gruol D, Terenius L. **Live cell study of kappa opioid receptor (KOR) dynamics in the plasma membrane and interactions with dynorphins.**
- 2:20 Portoghese PS, Yekkikarla AS. **Selective activation of kappa opioid receptor heteromers by exogenous and endogenous ligands in HEK-293 cells**
- 2:40 Clarke WP, Rowan MP, Sanchez TA, McGuire BA, Portoghese PS, Hargreaves KM, Berg KA. **Interactions between KOR and DOR in peripheral sensory neurons**
- 3:10 Yadav PN, Whistler J, Roth BL. **Cellular mechanisms of Salvinorin A action *in vivo*.**

3:30-4:00 **Discussion / Afternoon Coffee Break**

Oral session 7: **Developmental & Sex Differences**
(Bill Carlezon, Session Chair)

- 4:00 Varlinskaya E, Anderson R, Morales M, Truxell E, Spear LP. **Is the endogenous kappa opioid system implicated in adolescent-typical insensitivity to ethanol?**
- 4:20 Wei LN. **Physiological function of kappa opioid receptor in development.**
- 4:40 Coscia CJ, Croskey W, Kim EN, Hahn JW, Jagwani, S, Miller K, Belcheva MM. **Developmental stage dependent kappa opioid modulation of embryonic stem cell differentiation via MAP kinases.**
- 5:10 Liu-Chen LY, Wang Y, Rasakham K, Chudnovskaya D, Cowan A, and Huang P. **Sex Difference in KOPR-Mediated Behaviors and Brain KOPR level and KOPR-mediated [35S]GTPγS Binding in the Guinea Pig.**
- 5:20 Murray TF, Kelamangalath L, David SM, George J, Aldrich JV. **Kappa-opioid receptor inhibition of calcium oscillations in spinal cord neurons.**
- 5:40 **Closing Remarks**

7-9 PM Dinner (no host) (Local Restaurants, walk or short cab ride)

POSTERS Monday 4-6PM

Kash TL, Li CJ, Pleil KE, Stamatakis AM, Stuber GD. **Presynaptic inhibition of GABA release in the BNST by kappa opioid receptor signaling.**

Kapusta DR, Hoffman E, Zieske A, Varner KJ. **Kappa opioid agonists protect against acute kidney injury in a rat model of anesthesia, surgery and hemorrhage.**

Pintar J, Ansonoff M. **The pattern of ultrasonic vocalizations is altered in neonatal KOR-1 KO mice.**

Béguin C, Potuzak J, Xu W, Liu-Chen L-Y, Potter DN, Goodman T, Carlezon, Jr. WA, Cohen BM. **Diaryl ether containing kappa opioid receptor antagonists: synthesis and preclinical evaluation of novel candidate drugs for mood disorders.**

Mosier PD, Koparde VN, Westkaemper RB, Roth BL. **Potential interaction modes of *N*-alkyl-octahydroisoquinolin-1-one-8-carboxamides with the κ-opioid receptor.**

Nizhnikov ME, Pautassi R, Varlinskaya EI, Rahmani P, Spear NE. **Ontogenetic differences in kappa opioid mediation of ethanol's motivation properties.**

Schweitzer P, Roberto M, Gilpin N. **The kappa opioid receptor system modulates ethanol effects on inhibitory transmission in rat Central Amygdala.**

Harkey S, Maina FK, Kuhnmuench M, Hambro C, Mathews TA, Aragona BJ **Interactions between the dopamine and the dynorphin/kappa opioid receptor system regulate pair bond behavior in prairie voles**

Patkar KA, Sherwood ML, Singh HD, Ross NC, McLaughlin JP. **Detection of nor-BNI in mouse brain weeks after administration using LC-MS/MS.**

Tejeda HA, Schultz-Kuszk KN, Counette D, O'Donnell P, Chefer V, Shippenberg T. **Kappa-opioid receptor modulation of dopaminergic and amino acid neurotransmission in the medial prefrontal cortex.**

Morales M, Anderson R, Varlinskaya E, Spear, LP. **Pharmacological blockade of kappa opioid receptors and ethanol intake: Impact of age and sex.**

Anderson RI, Agoglia AE, Morales M, Varlinskaya EI, Spear LP. **Kappa agonist-induced conditioned taste aversion in male Sprague-Dawley rats: Impact of age and stress**

Nguyen K, Tseng A, Marquez P, Hamid A, Friedman TC, Lutfy K. **The role of endogenous dynorphin/kappa opioid receptor system in alcohol reward**

Marquez P, Hamid A, Friedman TC, Lutfy K. **The role of endogenous dynorphin in cocaine-induced motor stimulation and locomotor sensitization**

Berg KA, Rowan MP, Sanchez TA, Hargreaves KM, and Clarke WP. **Inflammatory mediator regulation of KOR in peripheral sensory neurons.**

Navarro H, Butala E, Gilmour B, Carrol FI. **The selective kappa antagonist, JDTic, but not RTI-240 and 241, is a noncompetitive inhibitor of the human kappa opioid receptor.**

Liu-Chen, LY, Aldrich, JV, Yakovleva, T, Huang, P. **Zyklophin, a systemically active selective peptide KOPR antagonist with short duration of action, has anxiolytic-like effects in mice.**

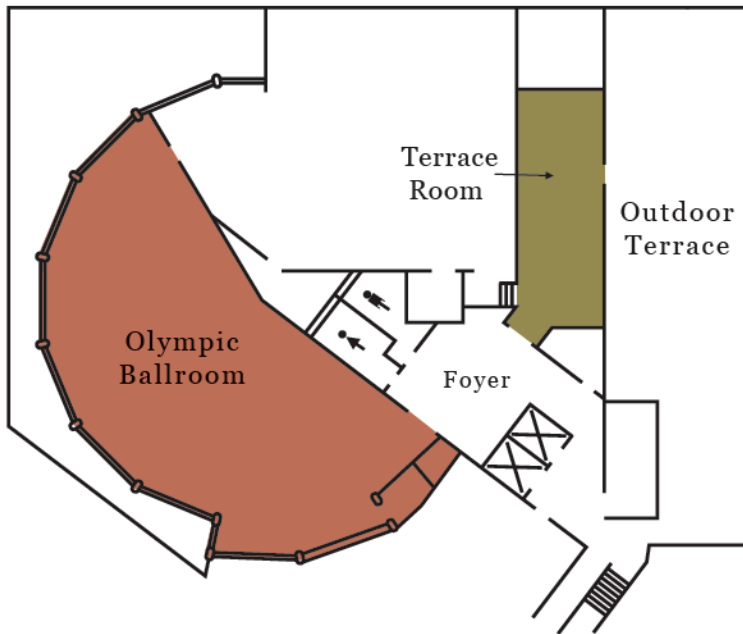
Ehrich JM, Zietz CC, Evans SB, Phillips PE, Chavkin C. **Interacting effects of U50488 and cocaine on dopamine release in the nucleus accumbens *in vivo*.**

Gustin RM, Smith JS, and Chavkin C. **Understanding the role of kappa-opioid receptor (KOR) modulation in the response to stress and the therapeutic potential of long-term KOR antagonists.**

Schattauer S, Shankar S, Tarabochia M, Liu-Chen LY, Chavkin C. **Arrestin-dependent p38 activation by the human kappa opioid receptor.**

Lemos JC, Roth CA, Phillips PEM, Chavkin C. **Kappa opioid regulation of serotonergic dorsal raphe neuronal excitability in naïve and stress-exposed mice**

FOURTH FLOOR



SECOND FLOOR

