



Mei-Chuan Ko



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Behavioral Pharmacological Studies in Non-Human Primates

Research emphasis:

Dr. Ko's research focuses on the behavioral neuropharmacology of drugs in monkeys. Using diverse behavioral and physiological assays, his group has conducted a series of functional studies of experimentally developed ligands, as compared to clinically used drugs, in animal models. In particular, his group establishes the efficacy and tolerability profiles of novel drugs as analgesics or antipruritics in rodents and monkeys. These preclinical studies in non-human primates not only provide the pharmacological evidence of novel ligand-receptor systems for regulating sensory processing, but also transform newly developed drugs into future therapies.

Selected publications:

Lin AP, Ko MC. (2013) The therapeutic potential of nociceptin/orphanin FQ receptor agonists as analgesics without abuse liability. ACS Chemical Neuroscience 4(2):214-224.

Sukhtankar DD, Lee H, Rice KC, Ko MC. (2014) Differential effects of opioid-related ligands and NSAIDs in nonhuman primate models of acute and inflammatory pain. Psychopharmacology 231(7):1377-1387.

Ding H, Hayashida K, Suto T, Sukhtankar DD, Kimura M, Mendenhall V, Ko MC. (2015) Supraspinal actions of nociceptin/orphanin FQ, morphine and substance P in regulating pain and itch in non-human primates. British Journal of Pharmacology 172(13):3302-3312.

Lee H, Ko MC. (2015) Distinct functions of opioid-related peptides and gastrin-releasing peptide in regulating itch and pain in the spinal cord of primates. Scientific Reports 5:11676.

Kiguchi N, Sukhtankar DD, Ding H, Tanaka KI, Kishioka S, Peters CM, Ko MC. (2016) Spinal functions of B-type natriuretic peptide, gastrin-releasing peptide, and their cognate receptors for regulating itch in mice. Journal of Pharmacology and Experimental Therapeutics 356(3):596-603.

Application:

- Spinal cord
- Analgesics
- Itch
- Neuropeptides

Collaboration potential:

- In vivo profile of ligands in monkeys with telemetry devices
- Intrathecal/Intracisternal administration
- Cerebrospinal fluid analysis
- Monkey models for biomedical applications