

Optimizing Opioid Signaling to Improve Pain Therapeutics



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Biography

Laura M. Bohn, Ph.D. is a Professor of Molecular Medicine and Neuroscience at The Scripps Research Institute in Jupiter, FL where she is endowed by the Dembling Fund for Drug Discovery and Human Health Research. She is actively pursuing new therapies for the treatment of pain and addiction by modulating G protein-coupled receptors which are critically involved in how patients respond to many therapeutics, including opioid analgesics. Dr. Bohn earned degrees in Chemistry and Biochemistry from Virginia Tech and a PhD in Biochemistry and Molecular Biology from St. Louis University School of Medicine. She completed post-doctoral training at Duke University Medical Center in the laboratory of Dr. Marc Caron in collaboration with Dr. Robert Lefkowitz. Dr. Bohn was a tenured Associate Professor of The Ohio State University College of Medicine in the Departments of Pharmacology and Psychiatry before she joined TSRI in 2009. She has received a young investigator award from the Society for Neuroscience; the Joseph P. Cochin Award from CPDD; the John J. Abel Award in Pharmacology from the ASPET in 2011; and the Viktor Mutt Lectureship from the International Regulatory Peptide Society in 2018. Her research program is funded by the National Institutes on Drug Abuse.

Abstract

When drugs bind to receptors, they coordinate a series of signaling events that lead to physiological responses. Opioid receptors are G protein-coupled receptors (GPCRs); in addition to coupling to G proteins, they can be regulated by many different cellular proteins. The interactions between receptors and their signaling partners can vary between neuronal populations and tissues throughout the body; therefore, there may be an opportunity to maintain efficacy in pain pathways while avoiding other side effects associated with opioid pain management. We are developing compounds that selectively engage certain signaling pathways over others to directly test if we can improve opioid-induced pain relief while avoiding certain side effects, such as opioid overdose

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