



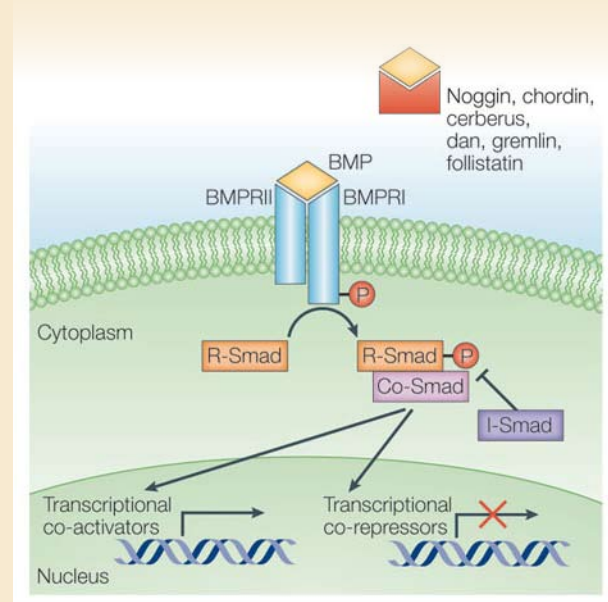
Partha Mukhopadhyay

Assistant Professor

Department of Molecular, Cellular &
Craniofacial Biology
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Research Activities:

Dr. Mukhopadhyay's principal research focus involves investigation of the role and interaction of various peptide growth factors and transcriptional regulators, whose collective interplay can regulate neural tube and neural crest development, orofacial ontogenesis and palatogenesis. His specific research interests are to examine the role of the nuclear transcriptional regulators (Smads and Ids), coactivators (CBP and p300) and corepressors (c-Ski and Sno) in craniofacial growth and anomalies, to analyze the role of growth factors like TGF- β s and BMPs in orofacial development as well as characterization of the various transcription factors and their role in normal orofacial growth. Currently, he has been using DNA microarray technology to establish comprehensive "microRNA expression profiles" of developing murine orofacial tissue and of developing neural tube to identify important candidate microRNAs regulating palatogenesis and neural tube development, respectively. In addition, his current projects investigate: (1) BMP signaling (involving BMP receptor specific Smads such as Smad-1, Smad-5 and Smad-8/9) during orofacial development (2) the role of Id (inhibitor of differentiation) -1, Id-2, Id-3 and Id-4 helix-loop-helix transcription factors in orofacial ontogenesis and (3) Epigenetics and Fetal Alcohol Syndrome.



Role: Principal Investigator

Title: BMP Regulated Transcription in Embryonic Palatal Tissue

Funding Agency: The Cleft Palate Foundation

Direct Costs Funded: \$10,000

Peer-reviewed Publications:

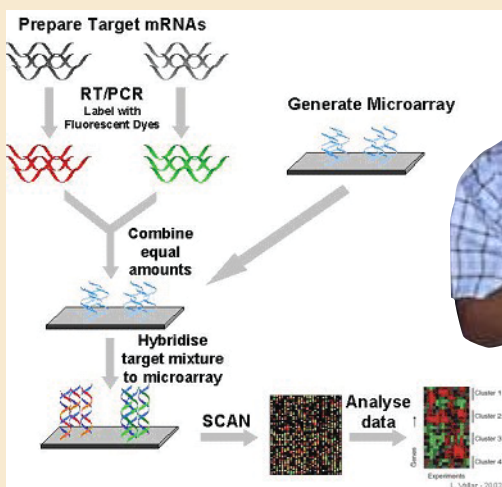
Bhattacharjee V, **Mukhopadhyay P**, Singh S, Johnson C, Philipose JT, Warner CP, Greene RM, Pisano MM. Neural crest and mesoderm lineage-dependent gene expression in orofacial development. *Differentiation* 75: 463-477 (2007).

Marian MJ, **Mukhopadhyay P**, Borchman D, Tang D, Paterson CA. Regulation of sarco/endoplasmic and plasma membrane calcium ATPase gene expression by calcium in cultured human lens epithelial cells. *Cell Calcium*. 41:87-95 (2007).

Marian M, **Mukhopadhyay P**, Borchman D, Tang D, Paterson CA. Plasma membrane Ca²⁺-ATPase isoform expression in human cataractous lenses compared to age matched clear lenses. *Ophthalmic Res* 40:86-93 (2008).

Mukhopadhyay P, Webb CL, Greene RM, Pisano MM. BMP signaling dynamics in embryonic orofacial tissue. *J Cell Phys* 216:771-779 (2008).

Marian MJ, **Mukhopadhyay P**, Borchman D, Tang D and Paterson CA. The effect of hydrogen peroxide on sarco/endoplasmic and plasma membrane calcium ATPase gene expression in cultured human lens epithelial cells. *The Open Ophthalmology Journal* 2:123-129 (2008).



Grants Funded:

Role: Principal Investigator

Title: Epigenetics and Fetal Alcohol Syndrome

Funding Agency: Kentucky Science & Engineering Foundation

Direct Costs Funded: \$20,000

