

LUNG INFLAMMATION AND RESPIRATORY DISEASES

Overview

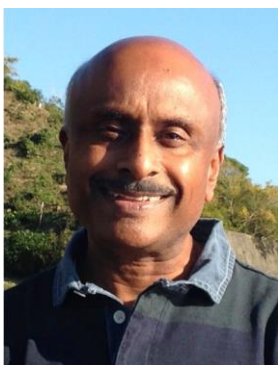
Inflammation is a biological response to neutralize external injurious agents such as pathogens, particulates, etc. and promote the healing process. Immune cells and other cells such as epithelial cells participate in the control of inflammation in the lung. A number of respiratory diseases, acute and chronic, such as asthma, chronic obstructive pulmonary disease (COPD), and bronchitis have inflammation as the root cause of disease pathogenesis. Excessive mucus production, disruption of endothelial and epithelial barrier integrity, changes in membrane permeability, and lung remodeling are some of the major cellular and biochemical changes that accompany inflammation induced lung injury. Increased productions of reactive oxygen species, bioactive lipids, and chemokines/cytokines underlie cell and tissue injury. Protein kinase signaling pathways, and transcriptional, post-transcriptional and epigenetic mechanisms control induction of inflammatory gene expression. Among transcription factors, NF- κ B and AP-1 factors play dominant roles in the control of the induction process.

Course objectives	<ul style="list-style-type: none">➤ The participants will gain an understanding of cellular and molecular mechanisms mediating lung inflammation.➤ They will understand the involvement of various chemical and biological mediators that initiate and sustain inflammation.➤ They will become familiar with molecular mechanisms that control the production of inflammatory proteins.➤ They will gain an understanding of using <i>in vitro</i> cell culture and <i>in vivo</i> animal models to study mechanisms of lung inflammation.
Course Coordinator	Prof. Manjula Shantaram Department of Studies in Biochemistry, Mangalore University, Post Graduate Centre, Chikka Aluvara, Kodagu 571 232 Karnataka Tel: +91 98452 25882 Email: manjula59@gmail.com

DATES	November 6 to 11, 2017
MODULES	<p style="text-align: center;">Day 1</p> <p>Lecture 1: What is inflammation?</p> <p>Lecture 2: Lung structural and biochemical changes caused by inflammation</p> <p>Lecture 3: Inflammatory lung diseases</p> <p style="text-align: center;">Day 2</p> <p>Lecture 4: Chemokines and cytokines</p> <p>Lecture 5: Role of immune and lung epithelial cells in the control of inflammation</p> <p>Lecture 6: Control of inflammatory gene expression – transcriptional and post-transcriptional mechanisms</p> <p style="text-align: center;">Day 3</p> <p>Lecture 7: Redox regulation in health and disease</p> <p>Lecture 8: Signal transduction pathways involved in inflammation</p> <p style="text-align: center;">Day 4</p> <p>Lecture 9: <i>In vitro</i> cell culture models to study regulation of inflammatory gene expression</p> <p>Lecture 10: A laboratory animal model of lung inflammation</p> <p style="text-align: center;">Day 5</p> <p>Lecture 11: Lung surfactant function</p> <p>Lecture 12: Regulation of surfactant protein gene expression</p> <p style="text-align: center;">Day 6</p> <p style="text-align: center;">Evaluation</p>

WHO CAN ATTEND?	<ul style="list-style-type: none"> - Students at M. Sc. and Ph. D. levels - Postdoctoral Fellows, Faculty, Physicians
COURSE REGISTRATION FEES	<p>The participation fees for taking the course is as follows:</p> <ul style="list-style-type: none"> <input type="checkbox"/> _Postgraduate Students of Mangalore University: Rs.500 <input type="checkbox"/> _Research Scholars: Rs.1000 <input type="checkbox"/> _Faculty/ Freelancer Scholars: Rs.2000 <input type="checkbox"/> _International Participants: US\$250 <p>The participants will be provided with accommodation on request (on payment basis).</p>

Foreign faculty



Dr. Vijay Boggaram is a Professor in the Department of Cellular and Molecular Biology at the University of Texas Health Science Center at Tyler, Texas, USA. He obtained his M. Sc. Degree in Biochemistry from the University of Mysore and then pursued his PhD degree in Biochemistry on the purification and characterization of glutathione reductase at Arrhenius Laboratory, University of Stockholm, Sweden. After obtaining PhD, he conducted postdoctoral research at the University of Texas Southwestern Medical Center, Dallas, on gene regulatory mechanisms controlling expression of cytochromes P450 and pulmonary surfactant proteins. His laboratory currently investigates molecular mechanisms of lung surfactant protein gene expression and cellular and molecular mechanisms of lung inflammation. His research has been supported by grants from the American Heart Association, the National Institutes of Health, and the National Institute of Occupational Safety and Health.



Host faculty

Dr. Manjula Shantaram is a Professor of Biochemistry at the Post Graduate Centre of Mangalore University, Chikka Aluvara, Kodagu District, Karnataka. She holds an M. Sc. degree in Biosciences from Mangalore University, Karnataka and a PhD degree in Biochemistry from Kasturba Medical College, Manipal, Mangalore University. Her area of specialization is biomarkers in brain tumors, type 2 diabetes mellitus and cardiac diseases.