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# Anti-inflammatory Agents from Natural Products: Inflammation, Cancer and Spices

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## Overview

Inflammation and spices are linked to cancer as catalyst and antagonist respectively. Extensive research during last three decades has identified many inflammatory proteins that are associated with cancer. NF-κB and TNF are top amongst that. Ayurveda and Indian Spices have been explored as promising sources for anti-inflammatory agents. Spices like Turmeric, Ginger, Pepper, Long Pepper and Cinnamon have shown promising activities. The Spice inspired research has led to the discovery of many active ingredients such as curcumin, gingerol, and piperine with anti-inflammatory and anti-cancer potential.

An understanding of basic and molecular immune biology with emphasis to cytokines and inflammation, cancer biology, and natural product drug discovery approaches are essential for researchers working in the area of anti-inflammatory agents and cancer therapeutics. This course offers experience-based insights from an eminent inflammation scientist. The course is divided into two parts of 3 modules each. Module 1 exposes the participants to current trends in drug discovery with a focus on anti-inflammatory agents from natural products and spices. Module 2 provides a primer on immunology and inflammation to highlight their role in the management of chronic diseases like cancer. Module 3 provides a primer on cytokines and cancer biology to show the importance of modulating multiple targets. Module 4 offers success stories of traditional knowledge inspired drug discovery and reverse pharmacology. Module 5 provides an overview of top ten spices, which have demonstrated potential as anti-inflammatory agents in cancer therapeutics. Module 6 discusses the pharmacological basis of the role of curcumin as an orally bioavailable down regulator of pro-inflammatory transcription factors, enzymes, and cytokines.

The course is designed for students/researchers/faculties interested in research areas such as cancer, inflammation, drug discovery, traditional medicine and natural products.

<b>Dates</b>	<b>December 5-17, 2016. Maximum Number of participants: 50</b>
<b>Who Can Attend</b>	<ul style="list-style-type: none"> <li>• Graduate students, M.Sc, M.Tech, M.Phil/ PhD, PDFs from biological, pharmaceutical and medical sciences including AYUSH institutions. Limited merit based seats can be offered to undergraduate students.</li> <li>• Faculty members from University departments, institutes and colleges</li> <li>• Researchers from national research laboratories, pharmaceutical industry professionals.</li> <li>• Medical professionals, Physician scientists.</li> </ul>
<b>Fees</b>	<p><b>Participants from abroad:</b> US \$100</p> <p><b>Participants from SAARC countries:</b> US \$ 75</p> <p><b>Industry/ Research Organizations:</b> Any of 3 modules: Rs. 3000/-    All 6 modules: Rs. 6000/-</p> <p><b>Academic Institutions:</b> All 6 modules: Rs. 3000/-</p> <p><b>SPPU students:</b> All 6 modules Rs. 1000/-</p> <ul style="list-style-type: none"> <li>• The participants will be provided accommodation in guesthouse on payment and availability basis.</li> <li>• Registration at GIAN website is mandatory</li> </ul>



**Professor Bharat Aggarwal** is an internationally acclaimed scientist with demonstrable ability in teaching, consultancy, research, and training in the field of immunology, inflammation, cancer and natural product research. He is Founding Director, Inflammation Research Institute, San Diego, California. Earlier, as a Professor of Medicine and Chief of the Cytokine Research at the University of Texas M. D. Anderson Cancer Center, he had been investigating the role of Inflammatory Pathways mediated through TNF, NF-kB, STAT3,

and CXCR4 for the Prevention and Therapy of Cancer and other Chronic Diseases. While at Genentech in the early eighties, he isolated and determined the structure of TNF alpha and TNF beta. His group has identified more than fifty novel compounds from natural products, dietary products and spices as anti-inflammatory agents. He has published almost 700 papers in peer-reviewed international journals (including Science, Nature, Cancer Cell, PNAS, JEM, Blood, JBC, Cancer Research, and Journal of Immunology), invited reviews and book chapters. Prof. Aggarwal holds over 33 patents. His publications exhibit high-citation index with over 10 exceeding 1000 with total citations 89,712 and H-index of 157. Prof. Aggarwal has edited 15 books and served as Guest Editor for several reputed journals. His recent book "Healing Spices" is already a Best-Seller.

### Course Coordinators

**Professor Bhushan Patwardhan**  
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**GIAN One-Time Registration**

<http://www.gian.iitkgp.ac.in/GREGN/>