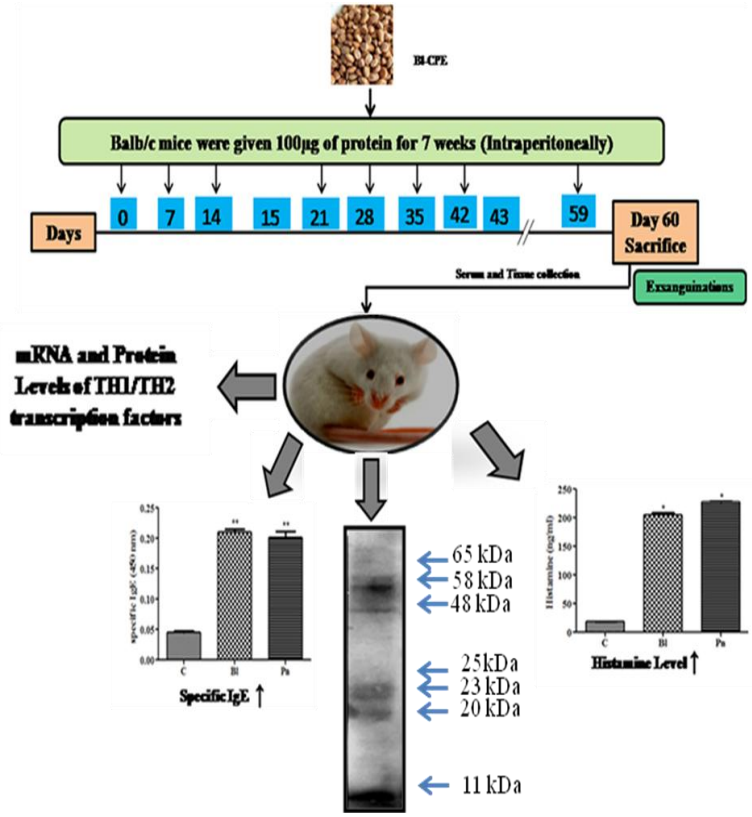
Allergenic assessment of *Buchanania lanzan* (Bl) - a tree nut protein

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Abstract

Tree nuts are among "Big Eight" of allergenic food and have been recognised globally for causing allergy. *Buchanania lanzan* (Bl) is one of the tree nuts consumed by South Asian population. However, little to nothing is known about *Buchanania lanzan* induced allergic manifestation. Therefore, evaluation of it's allergenic potential was undertaken. To understand the allergenic potential an animal study was undertaken using Bl-crude protein extract for sensitization of Balb/c mice and the sera of treated animals were collected. The sera used for IgE binding yielded the information that Bl-CPE possessed seven major IgE binding proteins found of 11, 20, 23, 25, 48, 54, and 65 kDa. Allergic parameters like specific IgE, specific IgG1, MCPT-1, PGD2 and histamine were assessed in mice sera and all were found to be elevated. The transcription factors determining the Th1/Th2 balance GATA-3, SOCS-3 and STAT-6 were found upregulated, whereas T-bet as expected was downregulated. Falling in line with the transcription factors, Th1/Th2 cytokine responses were also augmented in mice sera. In total, these responses put together induced systemic anaphylaxis upon Bl-CPE challenge in sensitized Balb/c mice. Conclusively, this is the first study that confirms the allergenic potential of *Buchanania lanzan* and tries to find and identify the major allergenic proteins in this tree nut. Details of result will be discussed during the paper presentation.

Image



Recent Publications

1. Gupta, Rinkesh Kumar, et al. "Glycation of clinically relevant chickpea allergen attenuates its allergic immune response in Balb/c mice." *Food chemistry* 235 (2017): 244-256.

2. Gupta, Kriti, et al. "Simple Extraction Cum RP-HPLC Method for Estimation of Nanotized Quercetin in Serum and Tissues of Mice." *Pharmaceutical Chemistry Journal* 52.2 (2018): 175-181.

3. Gupta, Parul, et al. "Synthesis and in vitro studies of PLGA-DTX nanoconjugate as potential drug delivery vehicle for oral cancer." *International journal of nanomedicine* 13 (2018): 67.

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Biography

Professor Premendra D. Dwivedi is a Sr. Principal Scientist of the Food Toxicology Division at CSIR- Indian Institute of Toxicology Research (CSIR-IITR), India, where he has been working since 1992. He received Masters Degree in Biochemistry from G. B. Pant University, India in 1983 and Ph. D. from Avadh University, India in 1991. He received Best Research Fellow award in the year of 1989 of CSIR-IITR in the Field of Immunology and Preventive Toxicology. He worked as a Post Doctoral Fellow at Anatomy Department, Tulane University Medical Center, New Orleans, USA, during 1997 to 1999 with Professor S. M. Hill. Professor Premendra D. Dwivedi is a member of many regulatory bodies/organizations such as food colours and flavours sub-committee of Bureau of Indian Standards (BIS), Food Hygiene Safety, Management and other system committee of BIS and Food Safety and Standard Authority (FSSAI), New Delhi, India. His current research interest includes allergenicity of GM and non GM foods, with special reference to legume allergy and immunological events behind the allergic reactions, molecular mechanism of food contaminants and nano-materials, studies on immune-pathology of tumors and search of newer immunotherapeutic agents against inflammatory diseases.

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