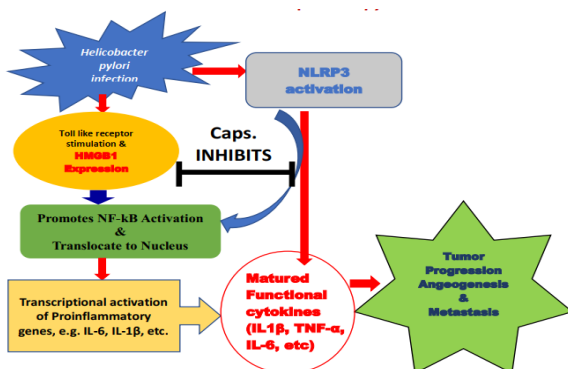


Anti-inflammatory effects of small herbal compound (Caps) on *Helicobacter pylori* infected cells in aspect of gastric cancer

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Abstract

According to WHO gastric cancer is fifth most common malignancies worldwide. Chronic *Helicobacter pylori* (H.P.) infection is one of common cause for gastric cancer. H.P. colonized in the human stomach, induces proinflammatory cytokines production, such as IL-1 β , IL-8, IL-6, and (TNF)- α , which are closely associated with gastric cancer. HMGB1, mediates various inflammatory functions, e.g. promotes the activation of NLRP3 inflammasomes via NF- κ B pathway. The interaction between HMGB1 and RAGE triggers NF- κ B expression, which stimulates the release of pro-inflammatory cytokines, e.g. TNF- α , IL-8, IL-6, IL-1 β that enhances the inflammatory response. H. pylori activates NLRP3 inflammasome which induces the signalling pathways through NF κ B, IL-1 β production. NLRP3 senses a general signal that induces the sequential events of inflammasome activation and NF- κ B regulates pro-inflammatory gene induction. Inhibitors against infectious bacteria like H.P. is quite challenging. Aims of the study was to reveal the effect a small herbal compound Caps. on H.P. infected gastric and macrophage cell line in relation to inflammatory responses of gastric cancer. H.P. culture, was used to infect gastric and macrophage cell line. Protein expression analysis showed that expression of HMGB1, NLRP-3 and (NF)- κ B were high in H.P. treated group when compared with Caps treated group. Levels of pro-inflammatory cytokines were significantly inhibited in Caps treated group when compared with H.P. infected group in related cell lines and anti-inflammatory cytokines IL-10 was induced in Caps treated group when compared with H.P. infected group in related cell lines. It can be concluded that the small herbal compound Caps significantly inhibits *Helicobacter Pylori* induced inflammatory response in gastric and macrophage cell line in aspect of gastric cancer.



Keywords: *Helicobacter pylori*, Gastric cancer, Herbal inhibitors, Inflammation

Biography:

Kalyani Saha has completed her PhD from University of Calcutta. Now she is working as post-doctoral research fellow (ICMR-PDF) at ICMR-NICED, Kolkata. She has published 8 papers in reputed journals and till now she has presented 7 posters and 6 oral presentations in different national and international conferences. She has 8 years of research experience in the field of green nanotechnology, pathophysiology, snake venom research, nanotechnological techniques, cancer biology, molecular biology, histology and toxicology. She has received Best Poster Award in International Conference TSICON2013, India (2013) and Best Oral Award in national Conference in ASSOPICON (2015), India.



Speaker Publications:

1. "In vitro and In vivo Anti-Arthritic and Anti-Inflammatory Activity of Bungarus Fasciatus Venom"; J Toxins/ 2015 / Volume 2 Issue 1; Pages 1-5
2. "Russell's viper venom induced nephrotoxicity, myotoxicity, and hepatotoxicity-Neutralization with gold nanoparticle conjugated 2-hydroxy-4-methoxy benzoic acid in vivo"; IJEB Vol.55(01)/2017; Pages 7-17

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