

- 1. Title of research project:** “Novel Drug Delivery Design For The Treatment of Helicobacter Pylori infection”
- 2. Name of PI:** Prof. P. R. Nalawade
- 3. Funding Agency:** UGC
- 4. Project Reference number/ File number:** 47-105/02 (WRO)
- 5. Executive summary of the project along with output:**

H. pylori are the major etiologic factor in the peptic ulcer disease and the diagnosis. H. pylori essentially reside on the luminal surface of the gastric mucosa under the mucus gel layer in the acidic environment of the stomach. This is common and bad experience amongst the masses. No single antibiotic has been able to eradicate this organism effectively and limitations of existing therapy are patient noncompliance. Thus the objective of the project was to formulate and evaluate anti-bacterial activities of gel formulation of metronidazole and tetracycline using floating drug delivery system. In the present work capsules containing metronidazole and tetracycline and the polymers HPMC i.e. Methocel K15 and K4 series alongwith microcrystalline cellulose were prepared. The capsules were evaluated for the content uniformity and drug release in vitro. The prepared capsules were evaluated for antibacterial activity against H. pylori. The capsules inhibited growth of H. pylori when tested using agar plate method and showed prominent zone of inhibition. Further in vivo studies on prepared capsules in human volunteers were carried out. The release of drugs from the capsules was evaluated by gamma scintigraphy using radionuclide Technicium-99 (Tc-99).

**Output:**

M. Pharmacy degree (Pharmaceutics) was awarded based on the findings of this work.