Patel et al., (2009) developed a time- and pH dependent system for delivering mesalamine to the colon. The system consisted of the core tablet of mesalamine which was compression coated with hydroxypropyl methylcellulose (HPMC K4M) (time-dependent factor). This was then coated with pH dependent polymer eudragit® L100. They concluded that the colonic drug delivery system has good potential for targeting drugs to the colon assuming that the in-vitro dissolution conditions are representative of the in-vivo conditions along the GIT.

Vaidya et al., (2009) developed multiparticulate system having pH-sensitive property and specific enzyme biodegradability for colon-targeted delivery of metronidazole. They prepared pectin microspheres using emulsion-dehydration technique. These microspheres were coated with eudragit1 S-100 using oil-in-oil solvent evaporation method. They concluded that eudragit S-100 coated pectin microspheres can be utilized as potential site specific delivery system to the colon.

Onishi et al., (2008) designed eudragit L100 (EuL)-coated chitosan (Ch)–succinyl-prednisolone (SP) conjugate microspheres (Ch–SP-MS/EuL) and examined then in-vivo efficacy and toxicity. They indicated that Ch–SP-MS/EuL enhanced effectiveness of prednisolone and also reduced its toxic side effects.

Anande et al., (2008) developed eudragit S100 coated gelatin capsule bearing cyst-targeted novel concanavalin-A (Con-A) conjugated mucoadhesive microspheres of diloxanide furoate (DF) for colonic delivery. The result showed that eudragit S100 coated gelatin capsule retarded the release of Con-A conjugated microspheres at low pH and released microspheres slowly at pH 7.4 in the colon.

Pertuit et al., (2007) designed 5-amino salicylic acid (5ASA) loaded nanoparticles using poly (ε-caprolactone) (PCL) and investigated their therapeutic potential in the treatment of inflammatory bowel disease. They observed that oral nanoparticle formulations demonstrated therapeutic potential and appeared to be an interesting approach for the therapy of inflammatory bowel disease.
Krishnamachari et al., (2007) developed eudragit S-100 coated PLGA microparticles for site specific delivery of budesonide to colon. The first objective of the study was to fabricate budesonide-loaded microparticles as time-dependent controlled drug delivery system employing a controlled release polymer whose degradation was independent of the colonic microflora composition. The second objective was to modify budesonide-loaded microparticles further to be pH-dependent using eudragit S-100 for site specific delivery to the ileum and colon. The result of this investigation showed promise for site specific and controlled delivery of budesonide in Crohn’s disease.

Meissner et al., (2007) prepared low molecular weight heparins (LMWH) loaded pH-sensitive microparticles using Eudragit P4135F that dissolved at pH > 7.2 for the treatment of inflammatory bowel disease. The microencapsulation of heparin based on a double emulsion method was optimized by varying several process parameters. Two different formulation techniques (solvent extraction and solvent evaporation) were tested. The overall optimization showed that solvent evaporation was more appropriate due to higher process yields and encapsulation rates. These microparticles represent a promising tool for the selective oral delivery of heparin to the colon and may prove their efficacy as a new therapeutic strategy in IBD.

Lamprech et al., (2007) designed pH-sensitive microspheres for the colonic delivery of the immunosuppressive drug tacrolimus. Eudragit P-4135F, a pH-sensitive polymer for colonic delivery was used to prepare tacrolimus microparticles using oil/oil emulsification or an oil/water emulsification technique combined with solvent extraction or evaporation step. All formulations proved their applicability in-vitro as promising devices for pH-dependent colonic delivery of tacrolimus.

Nokhodchi et al., (2007) designed and formulated an appropriate encapsulated form of benzoyl peroxide, using microsponge technology. They noted reduction in the release rate of benzoyl peroxide from the microsponges by increasing the ratio of drug and polymer. The kinetics study showed that the release followed Peppas model and the main mechanism of drug release from microsponges was diffusion.
Davaran et al., (2007) developed colon-specific delivery system of 5-Amino salicylic acid (5-ASA) using hydroxypropyl methyl cellulose (HPMC) hydrogels. HPMC hydrogels containing poly ethylene glycol (PEG) as cross-linking agent have been prepared by reacting HPMC sodium salt with polyethylene glycol dichloride. It was concluded that drug delivery system prepared by combination of a hydrophobic polymer and a polysaccharide was found to be a promising for delivering the drugs to colon.

Varshosaz et al., (2006) developed mesalazine chitosan microspheres for colon-specific delivery. As 5-ASA is rapidly absorbed from the small intestine and it was necessary to develop a colon-specific delivery system for it, coated chitosan microspheres prepared by an emulsion-solvent evaporation technique. They reported that chitosan microspheres with good bioadhesive properties can attach to colon tissues and release the drug slowly with a zero-order mode.

Jelvehgari et al., (2006) prepared benzoyl peroxide (BPO) microsponges to control the release of BPO to the skin. They observed that an increase in the ratio of drug to polymer resulted in a reduction in the release rate of BPO which was attributed to a decreased internal porosity of the microsponges.

Orlu et al., (2006) worked on design and evaluation of microsponge based colon specific drug delivery system containing flurbiprofen and indicated that compression coated colon specific tablet formulations start releasing the drug at the 8th hour corresponding to the proximal colon arrival time. This study presented a new approach based on microsponges for colon specific drug delivery.

Akhgari et al., (2005) studied the effect of different ratios of eudragit L100 and eudragit S100 on indomethacin release along with the effect of coat thickness using a statistical approach. The drug-binder suspension was sprayed onto non-pareil seeds in a fluidized bed coater. The indomethacin pellets were then further coated with solutions of poly methacrylates again in a fluidized bed coating apparatus. The in-vitro release studies of the pellets were conducted in media of different pH. It was found that the pellets released no drug at pH 1.2 and 6.5; release was noted to be slow at pH 6.8 and fast at pH 7.2.
Xu et al., (2005) developed calcium pectinate capsules for colon-specific drug delivery. They showed that calcium pectinate capsule possessed the ideal colon-specific drug delivery characteristics.

Siew et al., (2004) developed an enzyme-based fermentation system for in-vitro assessment of colonic digestion of amylase. They suggested that such a system has practical potential for in-vitro screening of putative amylase formulations for colonic drug delivery.

Hejazi, et al., (2004) examined the effect of chemical crosslinking of chitosan microspheres and tetracycline concentrations for oral administration in fasted gerbils. They indicated that chitosan microspheres prepared by chemical crosslinking provide a longer residence time in the fasted gerbil stomach than either tetracycline solution or microspheres prepared by ionic precipitation.

Wiwattanapatapee et al., (2003) developed polyamidoamine (PAMAM) dendrimer conjugates for colonic delivery of 5-aminosalicylic acid. They reported that these dendrimers have potential as colon-specific drug carriers.

Yang et al., (2003) prepared sustained-release nitrendipine microspheres with eudragit RS and aerosil using quasi-emulsion solvent diffusion method. They indicated that the method was suitable for preparing the sustained-release microspheres for poorly water soluble drugs.

Sriamornsak et al., (2003) developed composite film-coated tablets using deesterified pectin intended for colon-specific delivery of 5-aminosalicylic acid. They concluded that polygalacturonic acid (PGA) could be used as an additive in eudragit RS films to control the release of drug in colonic delivery system.

Zhang et al., (2002) developed multiparticulate system of chitosan hydrogel beads for colon-specific delivery of macromolecules using fluorescein isothiocyanate–labeled bovine serum albumin as a model protein. The hydrogel bead was formed by polyelectrolyte complexation of chitosan with its counterion, tripolyphosphate (TPP).
The protein release experiments were carried out *in-vitro* under different conditions to simulate the pH and times likely to be encountered during intestinal transit to the colon. The results showed that the hydrogel beads were degraded by rat cecal and colonic enzymes, resulting in a marked acceleration in the release of protein.

**Krishnaiah et al., (2002)** carried out *in-vitro* drug release studies on guar gum-based colon targeted oral drug delivery systems containing 5-fluorouracil. They indicated that compression-coated tablets containing 80% (FHV-80) of guar gum are most likely to provide targeting of 5-fluorouracil for local action in the colon, since they released only 2.38% of the drug in the physiological environment of the stomach and small intestine.

**Comoglu et al., (2002)** studied the effects of pressure and direct compression on tableting of microsponges. They reported that microspone compressibility was much improved over the physical mixture of the drug and polymer and owing to the plastic deformation of sponge-like structure, microsponges produce mechanically strong tablets.

**Sangalli et al., (2001)** developed an oral system for time and/or site-specific drug delivery and carried out its *in-vitro* and *in-vivo* evaluation. They showed that the system was capable in delaying drug release for a programmable period of time, and could be exploited to attain colon-targeted delivery according to a time-dependent approach.

**Mandal et al., (2001)** prepared porous biodegradable microparticles for delivery of pentamidine. They indicated that highly porous surface of such carriers allowed large molecules to release at a much faster rate than the microcapsules/microspheres.

**Krishnaiah et al., (2001)** developed colon targeted drug delivery systems for mebendazole using guar gum as a carrier. They reported that matrix tablets containing either 20% or 30% of guar gum are most likely to provide targeting of mebendazole for local action in the colon.
Gupta et al., (2001) developed colon specific drug delivery system with appropriate pH dissolution characteristics for the distal end of the small intestine. They demonstrated the potential of the system for colonic delivery by resisting drug release until pH 6.5. It was showed that combination of eudragit RL and RS proved successful for the sustained delivery of 5-aminosalicylic acid at the expected pH of the colon.

Mehta, et al., (2000) studied the effect of formulation and process variables on porosity parameters and release rates from a multi unit erosion matrix of a poorly soluble drug. They indicated that each porosity parameter investigated was well correlated with drug release rate and thus it is important to study the effect of porosity parameters in evaluating the in-vitro performance of the multi-unit erosion matrix for the controlled release of a poorly soluble drug.

Fukui et al., (2000) developed enteric coated time-release press-coated (ETP) tablets for colon specific drug delivery. The enteric coated time-release press-coated tablet showed acid resistance and time-released functions in in-vitro dissolution tests. ETP tablets were found potentially useful for oral site-specific drug delivery including colon targeting.

Ahrabi et al., (2000) developed pectin matrix tablets for colonic delivery of model drug ropivacaine. They reported that eudragit L 100 reduced the release in the simulated upper GI conditions without interference with the subsequent enzymatic activity.

Leopold et al., (2000) developed basic coating polymers for the colon-specific drug delivery in inflammatory bowel disease. They concluded that eudragit E is suitable coating polymer for drug release under such acidic conditions as found in the colon of patients with inflammatory bowel disease.

Lorenzo-Lamosa et al., (1998) developed microencapsulated chitosan microspheres for colonic drug delivery. They concluded that such approaches for the modification of chitosan as well as a new system exhibit great potential for colonic drug delivery.
Aritomi et al., (1996) prepared ketoprofen microsponges by quasi-emulsion solvent diffusion method using eudragit RS 100. The microsponges were compressed into tablets by direct compression method. Different pressure values were applied to the tablet powder mass in order to determine the optimum pressure. Results indicated that compressibility was much improved over the physical mixture of the drug and polymer; as plastic deformation of sponge-like structure microsponges produced mechanically strong tablets.