Yejin Yang et al., J Pharm Drug Deliv Res 2017, 6:3 (Suppl)
http://dx.doi.org/10.4172/2325-9604.C1.018

An anti-colitic mutual colon-specific prodrug of 5-aminosalicylic acid II: Benzocaine conjugated to dextran via a 5-aminosalicylic acid linker

Yejin Yang and Seongkeun Jeong
Pusan National University, Republic of Korea

Local anesthetics have beneficial effects on colitis. Dextran-5-(4-ethoxycarbonylphenylazo)salicylic acid ester (Dex-5-ESA), designed as a polymeric colon-specific prodrug liberating 5-ASA and benzocaine in the large intestine, was prepared and its therapeutic activity against colitis was evaluated using a TNBS-induced rat colitis model. Dex-5-ESA liberated 5-ASA and benzocaine in the cecal contents while (bio)chemically stable in the small intestinal contents and mucosa. Oral administration of Dex-5-ESA (equivalent to 10 mg 5-ASA/kg, twice a day) alleviated colonic injury and reduced MPO activity in the inflamed colon. In parallel, pro-inflammatory mediators, COX-2, iNOS and CINC-3, elevated by TNBS-induced colitis, were substantially diminished in the inflamed colon. Dex-5-ESA was much more effective for the treatment of colitis than 5-(4-ethoxycarbonylphenylazo)salicylic acid (5-ESA) that may not deliver benzocaine to the large intestine. Our data suggest that Dex-5-ESA is a polymeric colon-specific prodrug, liberating 5-ASA and benzocaine in the target site (large intestine), probably exerting anti-colitic effects by combined action of 5-ASA and benzocaine.

Biography

Yejin Yang belongs to the laboratory of bio-medicinal chemistry at Pusan National University in South Korea. She has studied in the field of colon-associated diseases such as colitis, colon cancer and inflammatory bowel diseases (IBD). She is trying to collect data through various experiments for the treatment of IBD with using rodent. She is to develop colon-targeted drug delivery by adjusting unique strategies to minimize unwanted side effects and increase therapeutic effects. She keeps studying to develop useful IBD treatments.

yang93810@naver.com

Notes: