

(Development of Polymeric Biomaterials for Clinical Applications)

*

(seheangoh@dankook.ac.kr*)

In recent years, polymeric biomaterials have been widely utilized in clinical practice to improve the quality of life for human being. In this presentation, our recently developed polymeric biomaterials with potential clinical uses, including tissue adhesion barrier and nerve guide conduit will be discussed. To effectively prevent the tissue adhesion which is a frequently occurring undesirable result after surgery, we developed a thermo-sensitive Pluronics/mildly crosslinked alginate/nonsteroidal anti-inflammatory drug mixture as an injectable tissue adhesion barrier gel. For the animal study, we recognized that the prepared gel is highly effective for the tissue adhesion prevention and non-toxic. Fortunately, the tissue adhesion barrier gel was recently commercialized by Hanmi Pharm Co. (brand name, Guardix-SG). Restoration with sufficient functional recovery after peripheral nerve injury continues to be a clinical challenge. To overcome this problem, we developed an asymmetrically porous tube with selective permeability as nerve guide conduit (NGC) using an immersion precipitation method. We observed that the unique nerve guide conduit shows greater nerve regeneration behavior than commercialized NGC.