Microneedle patches and self-assembled polymeric films for the localized non-invasive drug delivery

Targeted delivery of therapeutics at the site of action requires invasive procedures and complex formulations that are not yet efficient for clinical translation. Localized drug delivery allows greater control over the administered dose to achieve desirable drug release profile. Layer-by-layer self assembled films and compressed polymer films can be developed for local delivery of drugs through oral route. Similarly, polymeric microneedles overcome the barrier nature of epithelium in a minimally invasive manner to allow greater localized drug availability. Here, we present our recent work on delivery of small molecules and nucleic acid-based therapeutics for local non-invasive administration in eye and gastro-intestinal tract.