

In Vitro Thrombin Dose Response On Madin Darby Canine Kidney Cell Monolayer

Abstract:

Epithelial cells are known to play an important role in sustaining the airway barrier that may be impaired in certain inflammatory conditions. Recently, the use of thrombin has been reported to open the airway of patients with asthma as well as enhance the permeability of endothelial cell monolayers. We designed an in vitro model of Madin Darby Canine Kidney (MDCK) cells and the physiological functions of this model were evaluated by measuring the transepithelial resistance (TER). The epithelial cytoskeletal organization was observed by staining with Bisbenzimidazole and Rhodamine-Phalloidin (BBZ-Phalloidin) and confirmed by fluorescence microscopy. Measurements of the TER generated values up to 2020 Ω /cm². A dose response of thrombin was observed, showing the permeability changes in the MDCK monolayer and subsequent recovery. A relationship between TER values and cytoskeletal organization was also observed and discussed.