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• 中文摘要

Although asthma has been known epithelial damage (increasing permeability), eosinophil infiltration and mucous plugging, the protective permeability barrier mechanisms still need to understand for treatment of air inflammation. An in vitro tracheal epithelium of guinea pigs was used as a animal model for asthmatic membrane barrier study. The aerosolized ovalbumin sensitization of guinea pig was induced with the tracheal epithelial damage by electrical resistance, potential measurement and radioisotopic transport examination. The results have shown that tracheal permeability of IAR (immediate allergic response) and BC (before challenge) group were significantly increasing than control group as similar as previous finding (permeability coefficients for control, IAR, BC groups are 1.49.plmin.0.11, 1.92.plmin.0.11 and 2.32.plmin.0.17*10/sup -5/cm/sec, respectively). In addition, tissue integrity was also consisted with tissue resistance measurements (control group resistance > IAR and BC groups). Among 5 different prescriptions of Chinese medicine and some pure compounds, the flux measurements of paracellular marker-14C mannitol were examined and only Ma-Xin-Gan-Shi-Tang prescription could decrease permeability coefficients of mannitol. It was indicated that this Chinese Medicine prescription could protect and repair tight junction integrity. In order to understand the interaction between among each Chinese herbal in this prescription and major component effect on the IAR tissues, the prescriptions without each Chinese herbal Ephedrae Herba, Glycyrrhizae Radix and Gypsum Fibrosum, all could not protect on IAR tracheal tissue, except without Armeniacae Semen which permeability coefficients was decreased to 1.36.plmin.0.08*10/sup -5/cm/sec. Furthermore, major active compounds from these four Chinese herbal (Baicalin, Glycyrrhizin, Calcium salts and Amygdalin) were tested on IAR tracheal tissues. The results suggested that

only baicalin could protect effectively on tracheal muscosa of aerosolized-ovalbumin sensitized guinea pigs by repairing the tight junction integrity mechanism.

- 英文摘要

Although asthma has been known epithelial damage (increasing permeability), eosinophil infiltration and mucous plugging, the protective permeability barrier mechanisms still need to understand for treatment of air inflammation. An in vitro tracheal epithelium of guinea pigs was used as a animal model for asthmatic membrane barrier study. The aerosolized ovalbumin sensitization of guinea pig was induced with the tracheal epithelial damage by electrical resistance, potential measurement and radioisotopic transport examination. The results have shown that tracheal permeability of IAR (immediate allergic response) and BC (before challenge) group were significantly increasing than control group as similar as previous finding (permeability coefficients for control, IAR, BC groups are 1.49.plmin.0.11, 1.92.plmin.0.11 and 2.32.plmin.0.17*10/sup -5/cm/sec, respectively). In addition, tissue integrity was also consisted with tissue resistance measurements (control group resistance > IAR and BC groups). Among 5 different prescriptions of Chinese medicine and some pure compounds, the flux measurements of paracellular marker-14C mannitol were examined and only Ma-Xin-Gan-Shi-Tang prescription could decrease permeability coefficients of mannitol. It was indicated that this Chinese Medicine prescription could protect and repair tight junction integrity. In order to understand the interaction between among each Chinese herbal in this prescription and major component effect on the IAR tissues, the prescriptions without each Chinese herbal Ephedrae Herba, Glycyrrhizae Radix and Gypsum Fibrosum, all could not protect on IAR tracheal tissue, except without Armeniacae Semen which permeability coefficients was decreased to 1.36.plmin.0.08*10/sup -5/cm/sec. Furthermore, major active compounds from these four Chinese herbal (Baicalin, Glycyrrhizin, Calcium salts and Amygdalin) were tested on IAR tracheal tissues. The results suggested that only baicalin could protect effectively on tracheal muscosa of aerosolized-ovalbumin sensitized guinea pigs by repairing the tight junction integrity mechanism.