HIGH-PERFORMANCE THIN-LAYER CHROMATOGRAPHIC ANALYSIS OF LIPID COMPONENTS IN PIG BUCCAL AND ESOPHAGEAL EPITHELIUM.

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The buccal mucosa has generated widespread interest as an alternative route for drug delivery. For *in vitro* studies, porcine buccal mucosa is frequently used as a model membrane since its structure and permeability dynamics are close to those of human tissue. However, it suffers from certain practical disadvantages (fastidious and time-consuming excision, limited and often damaged surface...), which may be overcome by using esophageal mucosa as an alternative model. The latter is histologically similar to to its buccal counterpart, is easier to separate from the underlying tissue and furthermore, offers a greater, generally intact surface area.

Previous *in vitro* permeability studies using buccal and esophageal mucosae have shown similar permeability profiles for both tissues [1]. Since the permeability barrier of the buccal mucosa predominantly resides in the intercellular lipid matrix, which surrounds the superficial epithelial cells, the objective of this study was to investigate the biochemical nature of the corresponding material in the esophageal epithelium.

The lipid composition of the buccal mucosa has been previously investigated by TLC [2,3]. In this study, we have improved the separation and resolution of major buccal and esophageal epithelial lipids using high-performance thin-layer chromatography (HPTLC). Using the Automated Multiple Development (AMD) separation technique, it has been possible to separate and identify the major buccal and esophageal epithelial lipid classes using a 25-step solvent gradient based on methanol, dichloromethane and hexane.

Preliminary results show a similar lipid pattern in both epithelia.

References

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