

## PERMEABILITY OF ESOPHAGEAL TISSUE

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Permeability of tissue in the GI tract is important in determining the efficacy of pharmaceuticals and for determining whether certain topical treatments have better systemic alternatives. This study focuses on determining the permeability of healthy and diseased esophageal tissue.

A layer of major basic protein (MBP) was applied to monkey esophagus to simulate diseased tissue. MBP is a key marker for eosinophilic esophagitis. The esophagus was placed between two cuvettes.



Fluorophores were used as tracers to determine the permeability. The fluorophore was placed in one cuvette and allowed to diffuse through a hole in the cuvettes. The experiment suggests that the diseased tissue is more permeable than the healthy tissue, but the residence time for the fluorophores was quite long time, more than 24 hours for the smallest tracers. This could be due to the varying morphologies of the esophagi. Therefore, fluorescent microscopy has been employed to determine the permeability. Samples are currently being examined by sectioning the esophageal tissues and using the distance traveled by the tracer.

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