

recovery in response to infection has been shown to occur primarily at the mucosal surface of animals (see 1991). While it is not clear exactly how T<sub>1</sub>-cells affect the animal's ability to respond to specific pathogens, T<sub>1</sub> cells can also be found in the liver (see 1991) and it is likely that they play an important role in the local immune response.

### THE LOCAL IMMUNE RESPONSE

When a pathogen invades the body, the first line of defense is the mucosal epithelium. This layer of cells is located in the gut, respiratory tract, and urogenital system. It is composed of specialized cells called epithelial cells, which are responsible for maintaining the integrity of the mucosal barrier.

### THE MUCOCOLONIC ASSOCIATION

#### Mucocolonic Association

The mucocolonic association is a complex interaction between the mucosal epithelium and the colonic microbiota. It is characterized by a tight junctions between adjacent epithelial cells, allowing for the passage of small molecules but preventing the entry of larger ones. This barrier is maintained by a variety of mechanisms, including the production of mucus, the presence of antimicrobial peptides, and the action of commensal bacteria.

The mucocolonic association is important for the prevention of intestinal infections. For example, it is believed that the presence of commensal bacteria in the gut helps to maintain the integrity of the mucosal barrier by competing with pathogenic bacteria for resources and by producing antimicrobial substances.

The mucocolonic association is also important for the regulation of the immune system. For example, it is known that the presence of commensal bacteria in the gut can stimulate the immune system to produce antibodies against specific antigens.

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#### Antimicrobial Peptides

Antimicrobial peptides are small proteins that are produced by the mucosal epithelium. They are able to kill or inhibit the growth of a wide range of microorganisms, including bacteria, viruses, and fungi. These peptides are produced by a variety of mechanisms, including the production of mucus, the presence of antimicrobial peptides, and the action of commensal bacteria.

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