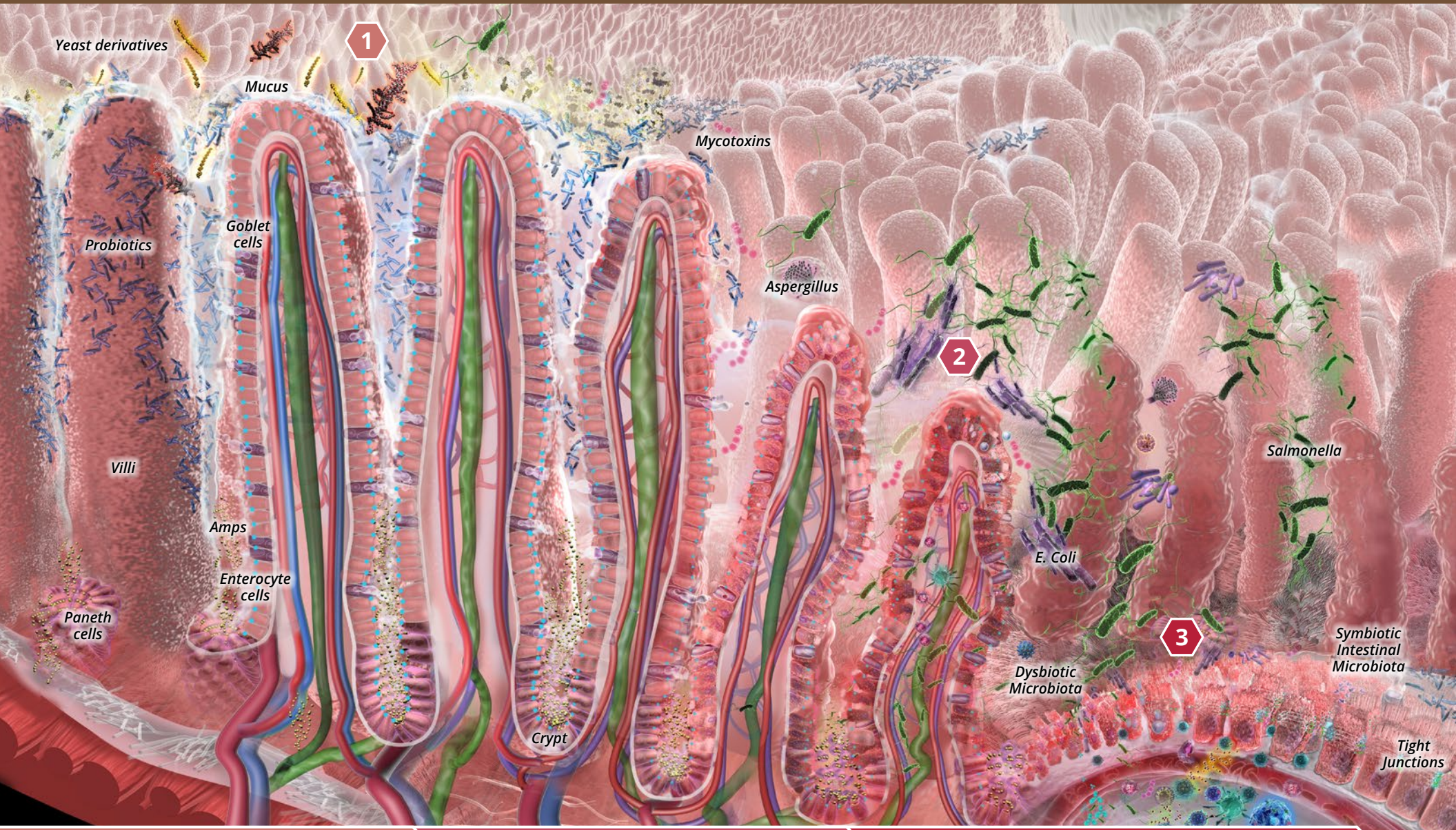
BARRIER FUNCTION IS CRITICAL TO GUT HEALTH

MicroBasics
Be Immune Smart



1 Healthy Mucosa Equals Gut Integrity

The intestinal barrier comprises multiple cell types, the most abundant being enterocytes. Enterocytes are bound together by a complex meshwork of proteins called tight junctions. Goblet cells secrete mucus to protect the intestinal epithelium. Paneth cells secrete antimicrobial peptides (AMP's) to defend against microbial damage.

2 Inflammation and Pathogen Overload

Factors that trigger impaired barrier function include dysbiosis, toxins, dietary antigens, and chronic stress. Irrespective of the initiating cause, the disease process begins with an inflammatory response and it is the extent of this inflammatory response that determines performance effect.

3 Invasion and Disease Challenges

Compromised intestinal barrier function results in increased intestinal permeability **(Leaky Gut)** where the epithelial barrier and tight junction functionality are impaired, and the ability of the enterocyte to absorb nutrients is decreased. The goal is to prevent the colonization of harmful bacteria and support the intestinal immune system. **Resolution: G-Tract Technology**.

IMMUBIOME™: THE INSIDE STORY ON LEAKY GUT SYNDROME

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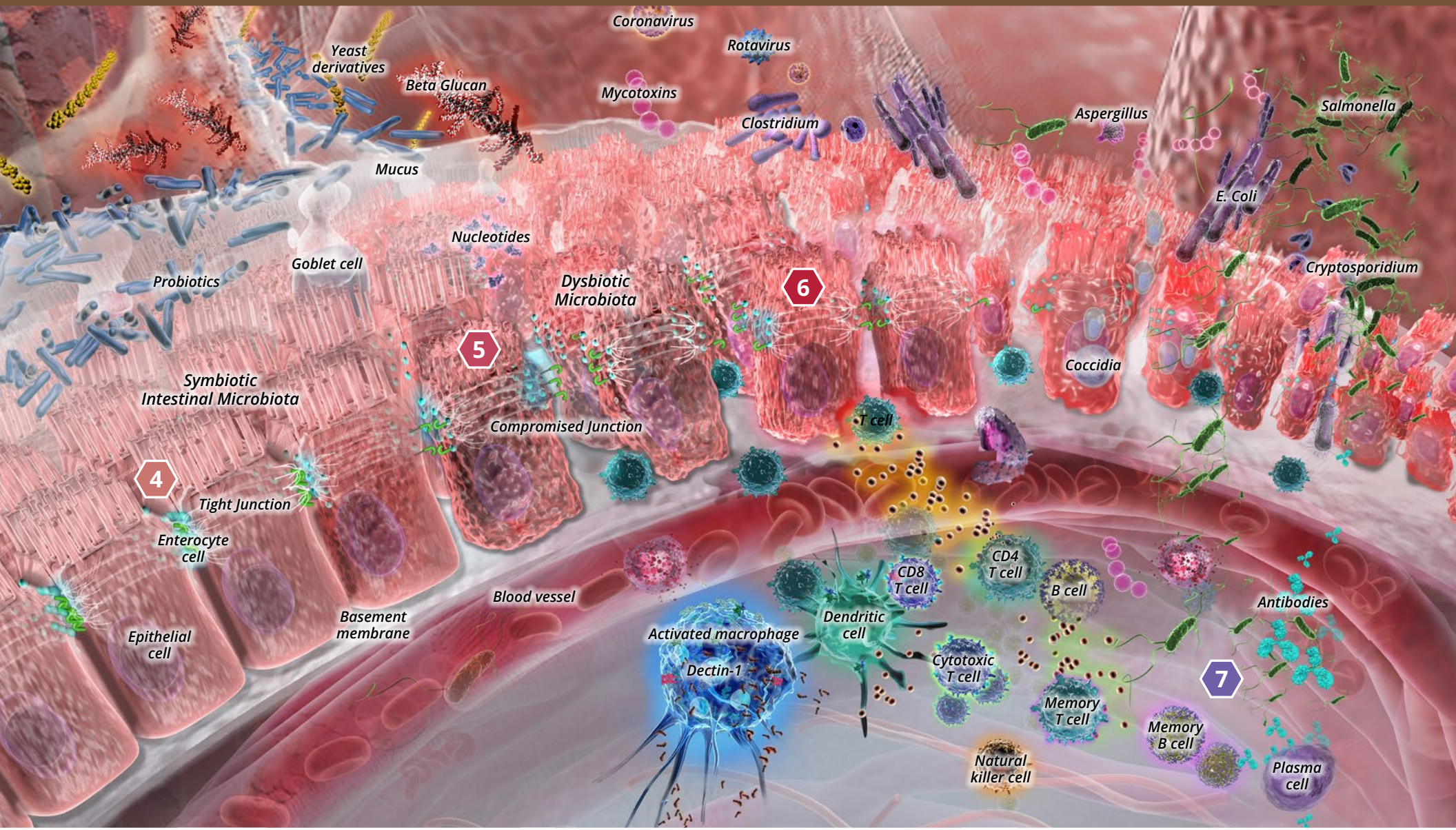

4 Tight Junctions

Tight Junctions link epithelial cells and are key to regulating intestinal permeability. They selectively allow passage of nutrients while blocking undesirable substances.

5 Compromised Junctions

Compromised junctions allow pathogens, dietary antigens, toxins, aggressive radicals, and other undesirable substances to pass through, resulting in cell damage and the activation of the immune system.

6 Consequence of Inflammation

One of the negative consequences of inflammation is the increase in gut permeability which leads to negative effects on nutrient absorption and an increased incidence of diarrhea. An appropriate immune response limits the consequence of challenge while an inadequate or excessive response depresses assimilation efficiency and productivity (Klasing et al., 1998).

7 Intestinal Immunity

A significant portion of the immune system resides within the digestive tract. Maintaining intestinal immunity is dependent upon a balanced microbiome, strong tight junctions, long healthy villi, and low levels of inflammatory cytokines. ImmuBiome technology supports intestinal health and gut immunity.