When it comes to the gut microbiota, sometimes it's not only what you are feeding a patient, but also how bacteria and certain ingredients can work together in a beneficial way. **Synbiotics** are a mixture of prebiotics and probiotics that benefit the host by improving the survival and implantation of live beneficial bacteria in the gastrointestinal tract. This is achieved by selectively stimulating the growth of beneficial bacteria to help maintain gut health.

The World Health Organization defines **probiotics** as "live microorganisms that when consumed in adequate amounts confer a health benefit on the host." This is achieved by:

- Modification of gut microbiota
- Compete with pathogenic bacteria for binding to gut mucosa
- Strengthening of gut epithelial barrier
- Modulation of host immune system
- Production of short-chain fatty acids

The health benefits of probiotics are strain specific. The probiotic strain *Enterococcus faecium* SF68®, found in FortiFlora® and FortiFlora® SA Synbiotic Action, has been shown to support the gastrointestinal, immune, and general health of cats and dogs.

**Prebiotics**, such as psyllium, are non-digestible carbohydrates that are selectively fermented by beneficial bacteria in the colon. Prebiotics may promote growth and metabolic activity of beneficial bacterial species. This may improve microbial balance in the gastrointestinal (GI) tract and promote production of butyrate, the primary fuel source for colonocytes.

**Butyrate**, the short-chain fatty acid, may confer the following GI benefits:

- Increase absorption of water and electrolytes
- Enhance mucosal blood flow
- Nourish gut epithelium to promote cell turnover
- Enhance mucosal size and stability through increasing microvilli size
- Reduce microbial adhesion of pathogenic bacteria
- Anti-inflammatory action to increase healing after an insult and decrease gut permeability
- Enhance immune system function
- Improve fecal quality and odor

**Psyllium** is a prebiotic which has soluble and insoluble properties.

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3. Redfern, A. Suchodolski, J., and Jergens, A. Role of the gastrointestinal microbiota in small animal health and disease. Veterinary Record. 10.1136/vr.103826