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## Product Summary

ProbioMed™ Kids provides a custom, synergistic formula of 10 billion colony-forming units (CFUs) of 11 diverse, highly researched probiotic strains with elucidated strain IDs delivered as a chewable probiotic to promote gastrointestinal (GI) microbial diversity in children. The inclusion of the nonpathogenic yeast, *Saccharomyces boulardii* (*S. boulardii*), in this formula allows for more acute applications for post-antibiotic intervention and diarrhea in children, as needed. ProbioMed™ Kids has a delicious mixed-berry flavor and uses all "clean" ingredients, as it is sweetened with monk fruit extract and contains zero artificial colors, flavors, or sweeteners. Although this product is intended for children ages 4 and older, it is also suitable for adults who prefer a chewable delivery format due to pill fatigue or difficulty swallowing capsules and/or softgels.

There are significant microbial shifts within the gut as a child grows from infancy to adolescence and, thus, often requires support to help build bacterial diversity to support overall gastrointestinal and immune health.<sup>1</sup> Various factors influence a child's intestinal microbial composition including birth delivery (Cesarean section or vaginal), antibiotic administration in early life, dietary patterns, and whether the infant was breastfed or formula-fed.<sup>1</sup> ProbioMed™ Kids includes clinically relevant doses of *Bifidobacterium lactis* HN019 (B. lactis HN019), *Lactobacillus rhamnosus GG* (LGG), and *S. boulardii* (all of which have demonstrated significant benefits for children), in addition to eight other well-researched strains to round out this formula with greater strain diversity within the gut microbiota, which optimizes host health most effectively.

## Highlights

- Strain transparency — specific strain identification with disclosed CFUs
- Strain diversity — combines 11 strains at clinically significant doses for children
- Evidence-based formulations — strains are heavily researched and validated
- Shelf-stable — significant overage of strains ensures long shelf life and delivery of stated CFU count
- State-of-the-art moisture, oxygen, and light-resistant, desiccant-lined packaging to protect probiotics and extend shelf life, and to eliminate the need for refrigeration
- Strong adherence to intestinal epithelial and mucosal walls
- Free of artificial flavors, colors, or sweeteners
- Delicious, chewable delivery format for increased compliance
- Free of common allergens, including dairy, gluten, and soy

## Select Probiotic Strains for Children's Health

### *Lactobacillus rhamnosus GG* and *Saccharomyces boulardii*

*Lactobacillus rhamnosus GG* and *S. boulardii* supplementation have been shown to be particularly effective in preventing and reducing the duration of diarrhea, including acute infectious diarrhea, antibiotic-associated diarrhea, *Clostridium difficile*-associated diarrhea, and nosocomial diarrhea.<sup>2-7</sup> A systematic review and meta-analysis of children compared with controls showed LGG significantly reduced the duration of acute rotavirus-associated diarrhea, the most common cause of severe diarrhea in children and infants worldwide.<sup>8</sup>

Additionally, long-term intake of 1 million CFUs of LGG per day in children ages 2 to 7 years prevents penicillin-associated changes in the microbiota, reduces the frequency of antibiotic-associated GI complaints, and may provide long-term protection against certain bacterial infections.<sup>2</sup> Compared to a placebo, LGG may also significantly reduce the frequency and severity of recurrent abdominal pain in children with irritable bowel syndrome.<sup>9</sup>

LGG is shown to be one of the most clinically effective probiotics for the management of allergic inflammatory responses (e.g., food allergies and atopic diseases) in pediatric populations beyond infancy, as gut barrier restoration plays a critical role in reducing inflammatory conditions.<sup>10-13</sup> A review demonstrated that 1 billion CFUs of LGG supplementation accelerates oral tolerance to cow's milk protein in allergic children by increasing production of butyrate, directly interacting with the immune system to stimulate a Th1 response and T-regulatory cell induction, and to modulate cytokine production.<sup>13</sup> Clinical trials have shown LGG to significantly reduce overall risk for developing atopic eczema during the first seven years of life.<sup>12</sup>

Furthermore, LGG supplementation was shown in a systematic review to have favorable effects on cognitive function in children and adolescents by a significant risk reduction of developing ADHD or AS manifestations.<sup>14,15</sup> LGG also plays a beneficial role in children's dental health, particularly in ages 3 to 4 years, as it has been shown to significantly reduce the risk of dental caries and have an inhibitory effect on oral pathogenic bacteria, such as *Streptococcus mutans*.<sup>16,17</sup> Among children attending day care, clinical trials showed long-term LGG consumption may significantly reduce the risk and severity of respiratory illnesses, decreasing the number of absences from day care due to illness.<sup>18-20</sup>

### ***Bifidobacterium lactis* HN019 and *Lactobacillus paracasei* Lpc-37**

Robust evidence from in vitro, animal, and human studies show *B. lactis* HN019 is a safe and well-tolerated strain that possesses antipathogenic and immune-enhancing effects, and the capacity for intestinal colonization.<sup>21</sup> In healthy children, aged 2 to 5 years old, administration of *B. lactis* HN019 and LPC37 reduced the incidence of community-acquired diarrhea and fever during the high-risk season.<sup>23</sup> These strains were also positively correlated with higher fecal short-chain fatty acid (SCFA) and branched-chain fatty acid (BCFA) levels, and increased total *Bifidobacterium* counts, suggesting that an increase in SCFA and BCFA levels positively influences the composition of beneficial bacteria levels.<sup>22</sup>

An in vitro study demonstrated *B. lactis* HN019 (100 million CFU) effectively inhibited the attachment of the pathogenic bacteria *Salmonella typhimurium* onto intestinal epithelial cells and attenuated interleukin-8 messenger RNA (mRNA) levels at baseline.<sup>23</sup> In children 1 to 3 years of age, supplementation with 19 million CFUs of *B. lactis* HN019 along with a prebiotic oligosaccharide, which facilitated the growth and activity of *B. lactis* HN019, resulted in a significant reduction of dysentery, pneumonia incidence, severe acute lower respiratory infections, and severe febrile illness compared to controls.<sup>24</sup> Furthermore, *B. lactis* HN019 (19 million CFUs) and prebiotic-fortified milk supplementation for 1 year in children ages 1 to 4 years significantly reduced the risk of anemia and iron deficiency, and increased weight gain compared to controls.<sup>25</sup>

### **ProbioMed™ Kids may benefit the following\*:**

- Children not eating a well-balanced diet rich in dietary fiber<sup>1</sup>
- Antibiotic-associated gastrointestinal complaints<sup>2</sup>
- Potential reduction of the need for antibiotic use<sup>2</sup>
- Acute rotavirus-associated diarrhea<sup>8,26</sup> and antibiotic-associated diarrhea<sup>3</sup>
- Irritable bowel syndrome — reduced frequency and severity of abdominal pain in children<sup>9</sup>
- Atopic dermatitis (eczema)<sup>10,12</sup>
- Healthy immune system maturation<sup>13</sup>
- Oral tolerance acquisition of common food allergens<sup>13</sup>
- Cognitive function in children<sup>14</sup>
- Potential reduction in the risk of developing attention deficit hyperactivity disorder (ADHD) or Asperger's syndrome (AS)<sup>14,15</sup>
- Potential reduction in the risk of dental caries in children<sup>16,17</sup>
- Potential reduction in the risk of respiratory tract infections<sup>18-20</sup>
- Overall gastrointestinal health and intestinal microbiota composition<sup>2</sup>

<b>Supplement Facts</b>	
Serving Size 1 tablet	
Amount Per Serving	% Daily Value
Children's Probiotic Blend	123 mg (10 billion CFU) *
<i>Saccharomyces boulardii</i>	0.5 billion CFU *
<i>Lactobacillus paracasei</i> (Lpc-37)	1.0 billion CFU *
<i>Lactobacillus plantarum</i> (Lp-115)	1.0 billion CFU *
<i>Bifidobacterium infantis</i> (Bi-26)	0.5 billion CFU *
<i>Bifidobacterium lactis</i> (HN019)	2.5 billion CFU *
<i>Lactobacillus rhamnosus</i> (GG)	2.0 billion CFU *
<i>Bifidobacterium bifidum</i> (Bb-06)	0.5 billion CFU *
<i>Bifidobacterium longum</i> (Bi-05)	0.5 billion CFU *
<i>Lactobacillus casei</i> (Lc-11)	0.5 billion CFU *
<i>Lactobacillus salivarius</i> (Ls-33)	0.5 billion CFU *
<i>Lactobacillus gasserii</i> (Lg-36)	0.5 billion CFU *

\*Daily Value not established.

**Other Ingredients:** Dextrates, natural mixed berry flavor, stearates (vegetable source), citric acid, silica, monk fruit extract.

Formulated with 30.14 billion CFU at time of manufacture.

#### **Recommended Use:**

Children ages 4 and over: chew one tablet per day with a meal, or as directed by your health care practitioner.

For a list of references cited in this document, please visit:

<https://www.designsforhealth.com/techsheet-references/probiomedkids-references.pdf>

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