HOWARU® premium probiotics — knowledge included.

At DuPont, we understand that the power of probiotics rests in their ability to effectively maintain and restore good health. The DuPont™ Danisco® portfolio includes the HOWARU® brand of highly effective probiotic preformulated blends and single strains, and are available as culture concentrates, standardized blends or in consumer-ready finished formats.

HOWARU® proprietary blends from DuPont — HOWARU® Protect, HOWARU® Restore and HOWARU® Balance — have been scientifically formulated to provide condition-specific benefits backed by targeted clinical research.

In addition to these preformulated blends, DuPont offers a range of highly documented, single strain options — HOWARU® Dophilus, Bifido and Rhamnosus — that have been specifically selected for their immune-modulating properties. Both HOWARU® Dophilus and HOWARU® Bifido contribute to overall gut health. These probiotic cultures have been proven efficacious in multiple gold standard, human clinical studies.
### HOWARU® single strains

<table>
<thead>
<tr>
<th>Taxonomy</th>
<th>Strain designation</th>
<th>Commercial name</th>
<th>Concentration*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bifidobacterium lactis</td>
<td>HN019™</td>
<td>HOWARU® Bifido</td>
<td>300B CFU/gm</td>
</tr>
<tr>
<td>Lactobacillus acidophilus</td>
<td>NCFM®</td>
<td>HOWARU® Dophilus</td>
<td>200B CFU/gm</td>
</tr>
<tr>
<td>Lactobacillus rhamnosus</td>
<td>HN001™</td>
<td>HOWARU® Rhamnosus</td>
<td>450B CFU/gm</td>
</tr>
</tbody>
</table>

*Billion or 10E9 CFU

### HOWARU® proprietary blends

<table>
<thead>
<tr>
<th>Product</th>
<th>Composition</th>
<th>Required Daily Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOWARU® Protect</td>
<td>Lactobacillus acidophilus Bifidobacterium lactis</td>
<td>10B CFU/day</td>
</tr>
<tr>
<td>HOWARU® Restore</td>
<td>Lactobacillus acidophilus Lactobacillus paracasei Bifidobacterium lactis Bifidobacterium bifidum</td>
<td>10B CFU/day</td>
</tr>
<tr>
<td>HOWARU® Balance</td>
<td>Lactobacillus acidophilus Bifidobacterium lactis</td>
<td>10B CFU/day</td>
</tr>
<tr>
<td>HOWARU® Balance Plus</td>
<td>Lactobacillus acidophilus Bifidobacterium lactis Litesse® dietary fiber</td>
<td>10B CFU/day</td>
</tr>
<tr>
<td>HOWARU® Balance Kids</td>
<td>Lactobacillus acidophilus Bifidobacterium lactis Galactooligosaccharide</td>
<td>6B CFU/day</td>
</tr>
</tbody>
</table>

### Available HOWARU® options

#### Concentrates
- 1 kg package size in stock

#### Custom blends
- Single or multi-strain
- Annual minimum order requirements apply

#### Finished formats
- Available upon request

#### Excipients**
Select from one or more of the following:
- Microcrystalline cellulose
- Rice maltodextrin
- Silicon dioxide (processing aid)
- Magnesium stearate (processing aid)
- Others available upon request

** No excipient used in culture concentrates

#### Packaging material
- Product is packaged in multi-layer, ultra-high barrier foil film which is heat-sealed and placed inside a fiberboard shipper

#### Package sizes
- 1, 20 and 50 kg
- Availability can vary depending on product

#### Shipping
- Shipping available worldwide
- Probiotic packages are typically transported in insulated styrofoam shippers with dry ice to avoid exposure to extreme high temperatures during transit

#### Support documentation
- Halal and Kosher Certification
- DS cGMP, ISO 9001, HACCP, MSDS

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This is business-to-business information intended for food and supplement producers, and is not intended for the final consumer. This information is based on our own research and development work and, to the best of our knowledge, reliable. However, DuPont does not assume any liability or risk involved in the use of its products, as conditions of use are beyond our control. Manufacturers should check local regulatory status of any claims according to the intended use of their product.

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