

NATURAL HEALTH PRODUCT

PREBIOTICS

This monograph is intended to serve as a guide to industry for the preparation of Product Licence Applications (PLAs) and labels for natural health product market authorization. It is not intended to be a comprehensive review of the medicinal ingredients.

Notes

- Text in parentheses is additional optional information which can be included on the label at the applicant's discretion.
- The solidus (/) indicates that either term and/or statement may be selected on the label.
- This monograph only supports single ingredient products (unless otherwise specified) containing a medicinal ingredient from Table 1.
- This monograph includes both fibre-related and prebiotic claims. These are distinct concepts and are assessed independently. Not all fibres qualify as prebiotics. A fibre claim must not be represented or implied as a prebiotic effect (and vice versa).

Date

TBD

Proper name(s), Common name(s), Source information

Table 1. Proper name(s), Common name(s), Source information

Proper name(s) ¹	Common name(s) ¹	Source information ¹			
		Source ingredient(s)	Source material(s)	Part(s)	Preparation(s)
Acacia	• Acacia • Acacia gum • Acacia seyal gum • Gum arabic	N/A	• <i>Senegalia senegal</i> • <i>Vachellia seyal</i>	Gum	Non-synthetic
Fructooligosaccharides	• Fructooligosaccharides • Oligofructose	N/A	<i>Beta vulgaris</i>	Root	Non-synthetic
		N/A	<i>Cichorium intybus</i>	Root	Non-synthetic
		N/A	<i>Helianthus tuberosus</i>	Tuber	Non-synthetic

Proper name(s) ¹	Common name(s) ¹	Source information ¹			
		Source ingredient(s)	Source material(s)	Part(s)	Preparation(s)
		Fructooligosaccharides	N/A	N/A	Synthetic
Inulin	Inulin	N/A	<i>Cichorium intybus</i>	Root	Non-synthetic
		N/A	<i>Helianthus tuberosus</i>	Tuber	Non-synthetic
		N/A	<i>Agave tequilana</i>	Stem and base leaves	Non-synthetic
Transgalactooligosaccharides	Transgalactooligosaccharides	Transgalactooligosaccharides	N/A	N/A	Synthetic
Xylooligosaccharides	Xylooligosaccharides	N/A	<i>Zea mays</i>	Cob	Non-synthetic
		Xylooligosaccharides	N/A	N/A	Synthetic
alpha-L-Fucopyranosyl-(1→2)-beta-D-galactopyranosyl-(1→4)-D-glucose	2'-Fucosyllactose	2'-Fucosyllactose	N/A	N/A	Synthetic
		N/A	<i>Escherichia coli</i>	Whole cell for biosynthesis	Synthetic
O-beta-D-Galactopyranosyl-(1→4)-O-2-(acetylamino)-2-deoxy-beta-D-glucopyranosyl-(1→3)-O-beta-D-galactopyranosyl-(1→4)-D-glucose	Lacto-N-neotetraose	Lacto-N-neotetraose	N/A	N/A	Synthetic
		N/A	<i>Escherichia coli</i>	Whole cell for biosynthesis	Synthetic

¹At least one of the following references was consulted per proper name, common name, and source information: NHPID 2026; HC 2025; USDA 2025; Barkeer et al. 2024; Eveleens Maarse et al. 2024; Bongartz et al. 2022; USP 2022; Jarrar et al. 2021; Kaddam et al. 2019; Mariod 2018; Babiker et al. 2017; Gardner and McGuffin 2013; Jensen et al. 2013; Calame et al. 2008; IOM 2005; Cherbut et al. 2003; Facciola 1998.

Route of administration

Oral

Dosage form(s)

This monograph excludes foods or food-like dosage forms as indicated in the Compendium of Monographs Guidance Document.

Acceptable dosage forms for oral use are indicated in the dosage form drop-down list of the web-based Product Licence Application form for Compendial applications.

Use(s) or Purpose(s)

Refer to Tables 2.1 to 2.3 below.

Dose(s)

Subpopulation(s)

Adults 18 years and older

Quantity(ies)

Table 2.1. Prebiotic and growth of healthy bacteria uses or purposes, and associated dose information (grams) per day

Uses or Purposes ¹	Medicinal ingredients	Doses/day ²
- A source of prebiotic(s). - Helps stimulate the growth of healthy bacteria (such as bifidobacteria) in the intestine/gut. - A source of prebiotic(s) that help support/maintain a healthy digestive system.	Inulin	5 – 15 grams
	Acacia	10 – 20 grams
	Fructooligosaccharides	2.5 – 15 grams
	Transgalactooligosaccharides	2 – 15 grams
	Xylooligosaccharides	1.4 – 8 grams
	2'-Fucosyllactose	10 – 20 grams
	2'-Fucosyllactose + Lacto-N-neotetraose	

¹References consulted for the uses or purposes: Harsselaar et al. 2024; Lee et al. 2024; Looijesteijn et al. 2024; Jackson et al. 2023; Parker et al. 2023; Wilson et al. 2021; Vulevic et al. 2018; Hong et al. 2017; Elison et al. 2016; Ramnani et al. 2015; Finegold et al. 2014; Holscher et al. 2014; Xiao et al. 2012; Marteau et al. 2011; Ramnani 2010; Calame et al. 2009; Silk et al. 2009; Na and Kim 2007; Roberfroid

2007a,b; Bouhnik et al. 2006; IOM 2005; Bouhnik et al. 2004; Cherbut et al. 2003; Menne et al. 2000; Bouhnik et al. 1999; Iino et al. 1997; Kleessen et al. 1997; Gibson et al. 1995; Tamai et al. 1992.

²References consulted for the doses: Harsselaar et al. 2024; Lee et al. 2024; Looijesteijn et al. 2024; Jackson et al. 2023; Parker et al. 2023; Jarrar et al. 2021; Wilson et al. 2021; Kaddam et al. 2019; Vulevic et al. 2018; Babiker et al. 2017; Hong et al. 2017; Elison et al. 2016; Hernandez-Gonzalez et al. 2016; Ramnani et al. 2015; Childs et al. 2014; Finegold et al. 2014; Holscher et al. 2014; Xiao et al. 2012; Calame et al. 2009; Glover et al. 2009; Silk et al. 2009; Kolida and Gibson 2007; Na and Kim 2007; Bouhnik et al. 2006; IOM 2005; Bouhnik et al. 2004; Cherbut et al. 2003; Menne et al. 2000; Bouhnik et al. 1999; Coussement 1999; Iino et al. 1997; Tamai et al. 1992.

Table 2.2. Fibre and digestive health uses or purposes, and associated dose information (grams) per day

Uses or Purposes ¹	Medicinal ingredients	Doses/day ²
• Source of fibre (for the maintenance of good health).³ • Source of fibre that helps support/maintain a healthy digestive system. • Fibre supplement (for the maintenance of good health). • Source of fibre that helps support/promote digestive regularity (as part of a fibre-containing diet).³	Inulin	2 – 15 grams
	Acacia	2.5 – 20 grams
	Fructooligosaccharides	2 – 15 grams
	Transgalactooligosaccharides	2 – 15 grams
	Xylooligosaccharides	2 – 8 grams

¹References consulted for the uses or purposes: CNF 2026; HC 2025; FCC 2024; HC 2021; Calame et al. 2009; IOM 2005; Cherbut et al. 2003.

²References consulted for the doses: CNF 2026; HC 2025; Jarrar et al. 2021; HC 2021; Kaddam et al. 2019; Babiker et al. 2017; Canfora et al. 2017; Childs et al. 2014; Calame et al. 2009; Glover et al. 2009; IOM 2005; Kolida and Gibson 2007; Cherbut et al. 2003; Menne et al. 2000; Coussement 1999.

³Products that provide at least 4 grams of fibre per day may use the additional claim “High source of fibre” on the label, while products providing at least 6 grams fibre per day may use “Very high source of fibre” (HC 2025).

Table 2.3. Gentle relief of constipation use or purpose, and associated dose information (grams) per day

Use or Purpose ¹	Medicinal Ingredient	Doses/day ¹
Helps provide (gentle) relief of constipation and/or irregularity	Inulin	10 – 15 grams

¹References consulted for use or purpose and doses: Holscher et al. 2014; Marteau et al. 2011; Gibson 2007; IOM 2005; Waston et al. 2019; Kolida and Kleessen et al. 1997.

Notes

- The above uses or purposes can be combined on the product label (e.g., A source of prebiotic which helps stimulate the growth of healthy bacteria (such as bifidobacteria) in the intestine).
- The terms 'Helps' or 'Helps to' can be used interchangeably on the label.
- For products containing 2'-fucosyllactose (2'-FL) in combination with lacto-N-neotetraose (LNnt), the prebiotic/growth of healthy bacteria uses or purposes are supported only when the combined daily intake of 2'-FL and LNnt is 10-20 grams and the 2'-FL:LNnt ratio is between 2:1 and 4:1 (Iribarren et al. 2020, 2021; Elison et al. 2016).

Direction(s) for use

All products except those containing 2'-Fucosyllactose and/or Lacto-N-neotetraose

- Take with at least 250 mL of liquid. Maintain adequate fluid intake (Daley and Shreenath 2025; IOM 2005; Wardlaw 1999).
- Take a few hours before or after taking other medications or health products (IOM 2005; Wardlaw 1999).

Powder dosage forms

(Thoroughly) Mix product in enough liquid (water, juice, etc) immediately before consumption.

Products containing inulin or fructooligosaccharides (optional)

To minimize gastrointestinal side effects, take in divided doses with meals (Schassfsma and Slavin 2015).

Products containing inulin for constipation/irregularity

Start at a lower dose (e.g., 2 g/day) and increase gradually to the recommended daily dose or until the desired effect is obtained.

Combination rules

- Combination of the medicinal ingredients listed in Table 1 within this monograph (Class I) is not permitted with the exception of products that combine 2'-Fucosyllactose and Lacto-N-neotetraose.
- Products combining two or more medicinal ingredients listed in Table 1 will be reviewed as Class III applications.

Duration(s) of use

Products providing more than 10 g acacia, per day

Ask a health care practitioner/health care provider/health care professional/doctor/physician for use beyond 12 weeks (Jarrar et al. 2021; Kaddam et al. 2019; Babiker et al. 2017; Glover et al. 2009).

Products providing up to 4 g xylooligosaccharides (XOS), per day

Ask a health care practitioner/health care provider/health care professional/doctor/physician for use beyond 8 weeks (Sheu et al. 2008; Tateyama et al. 2005).

Products providing more than 4 g xylooligosaccharides (XOS), per day

Ask a health care practitioner/health care provider/health care professional/doctor/physician for use beyond 3 weeks (Childs et al. 2014).

Risk information

Caution(s) and warning(s)

Products containing inulin for constipation/irregularity

- **Ask a health care practitioner/health care provider/health care professional/doctor/physician before use if you have diabetes** (Pray 2006).
- **Ask a health care practitioner/health care provider/health care professional/doctor/physician if symptoms worsen or if laxative effect does not occur within 7 days** (Pray 2006).

Products providing 2'-fucosyllactose (optional; refer to the Guidance document: Labelling of natural health products)

(May) contain(s) (small amounts of) lactose.

Products providing transgalactooligosaccharides (optional; refer to the Guidance document: Labelling of natural health products)

(May) contain(s) (small amounts of) lactose and/or sugar/glucose.

Contraindication(s)

Products containing inulin for constipation and/or irregularity

Do not use if you have fever or any undiagnosed gastrointestinal trouble (HC 2009).

Known adverse reaction(s)

Products containing inulin, fructooligosaccharides, or transgalactooligosaccharides

Stop use if hypersensitivity/allergy occurs (Lee et al. 2020; Brinker 2010; Hendler and Rorvik 2008; Franck et al. 2005; Gay-Crosier et al. 2000).

Products providing 5 g or more inulin or fructooligosaccharides, per day

When using this product you may experience temporary gas and bloating (Mysonhimer and Hoslcher 2022; Ramnani et al. 2015, 2010; Schassfsma and Slavin 2015; Holscher et al. 2014; Marteau et al. 2011; Bonnema et al. 2010; Bruhwyler et al. 2009; Bouhnik et al. 2007, 2006; Kolida and Gibson 2007; Menne et al. 2000; Coussement 1999; Kleessen et al. 1997).

Non-medicinal ingredients

Must be chosen from the current Natural Health Products Ingredients Database (NHPID) and must meet the limitations outlined in the database.

Storage conditions

Must be established in accordance with the requirements described in the *Natural Health Products Regulations*.

Specifications

- Isolated preparations of inulin, fructooligosaccharides (FOS), transgalactooligosaccharides (GOS) and xylooligosaccharides (XOS) are acceptable provided that the quantity listed on the PLA and label represents the declared active oligosaccharide/fructan content (dry basis) only. For the purposes of this monograph, the declared active content is considered to represent the fibre fraction.
- Isolated preparations of acacia gum are acceptable provided that the quantity listed on the PLA and label represents the acacia gum preparation and that it contains not less than 80% fibre (dry basis).
- Preparations of FOS with a degree of polymerization of ≥ 3 and ≤ 10 are considered acceptable. Preparations with a higher degree of polymerization are not considered to be captured by this monograph.
- Preparations of GOS with a degree of polymerization of ≥ 3 and ≤ 5 are considered acceptable. Preparations with a higher degree of polymerization are not considered to be captured by this monograph.
- The finished product specifications must be established in accordance with the requirements described in the Natural and Non-prescription Health Products Directorate (NNHPD) Quality of Natural Health Products Guide.

- The medicinal ingredient must comply with the requirements outlined in the NHPID.
- Analytical methods for determining fibre amounts are available in the [Policy for Labelling and Advertising of Dietary Fibre-Containing Food Products](#).

EXAMPLE OF PRODUCT FACTS:

Consult the Guidance Document, [Labelling of Natural Health Products](#) for more details.

Product Facts	
Medicinal ingredient in each scoop	
Fructooligosaccharides (<i>Cichorium intybus</i> – root)	XX g
Uses • Source of fibre for the maintenance of good health. • Source of fibre that helps support a healthy digestive system. • Fibre supplement. • Source of fibre that helps promote digestive regularity.	
Warnings	
If applicable¹: Allergens: food allergen, gluten (gluten source), sulphites Contains aspartame	
When using this product you may experience temporary gas and bloating. ²	
Stop use if allergy occurs.	
Directions Adults 18 years and older: • Take X scoop(s), X time(s) per day • Take with at least 250 ml of liquid. Maintain adequate fluid intake • Take a few hours before or after taking other medications or health products • Mix product in enough liquid immediately before consumption ³ • To minimize gastrointestinal side effects, take in divided doses with meals. ⁴	
Other information (Add storage information)	
Non-medicinal ingredients List all NMIs	
Questions? (Call) 1-XXX-XXX-XXXX	

¹This section can be removed from the table if the product contains no allergen or aspartame.

²Products providing 5 g or more fructooligosaccharides, per day.

³For powder dosage forms.

⁴Optional.

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APPENDIX 1 – INTERNATIONAL AND DOMESTIC PREBIOTIC DEFINITIONS AND CONSIDERATIONS

Various definitions and considerations for prebiotics are available in the scientific and regulatory literature. The following is provided as background for future refinement of the product class's definition and regulation in Canada.

The International Scientific Association for Probiotics and Prebiotics (ISAPP) prebiotic definition is described as follows:

“A substrate that is selectively utilized by host microorganisms conferring a health benefit”.
(Hutkins et al. 2025, Gibson et al. 2017)

The NNHPD aims to currently follow this definition with the recommendations contained in this monograph. This definition has also been adopted by the International Probiotics Association (IPA 2025), which has published a narrative scientific review on prebiotic history, challenges, and proposed standards (Saville et al. 2025). Notably and importantly, this includes five recommendations for prebiotic characteristics:

“The first characteristic is that the prebiotic compound should be resistant to digestion by the host; a prebiotic must reach the site of action intact.”

“The second characteristic for a prebiotic is that they should not be absorbed within the GI tract, so that they will remain available for selective utilisation by the gastrointestinal microbes.”

“The third characteristic for a prebiotic relates to its fermentability, and the fourth (related) characteristic implies that microbial fermentation must be selective.”

“The last characteristic requires that the product must have positive physiological effects, i.e. a prebiotic compound must be delivered in a sufficient/appropriate dose to elicit a physiological benefit (i.e. promote health).”
(Saville et al. 2025)

Additionally, there are alternative and broader definitions that may not fully align but do attempt to further recognize the current realities of the prebiotic global marketplace. For instance, the Global Prebiotic Association (GPA) has published a narrative scientific review that suggests the following:

“The scientific literature reveals that despite continuous efforts to establish a globally unified definition to guide jurisdictional regulations and product innovations, ambiguity continues to surround the terms prebiotic and prebiotic effect, leading to products that lack in full regulatory adherence being marketed worldwide. Thus, to reflect the current state of scientific research and knowledge and for the continuous advancement of the category, an update to the current prebiotic definition is warranted.”

“GPA builds on previous prebiotic definitions to propose the following expanded definition for prebiotic: *‘a component or ingredient that is utilized by the microbiota producing a health or performance benefit.’*”
(Deehan et al. 2024)

There are also current domestic practices to consider. As per the Canadian Food Inspection Agency (CFIA):

“These (prebiotic) implied health claims are only acceptable when accompanied by a statement of the specific and measurable health benefit conferred by the prebiotic substance, as demonstrated in humans, for example ‘Prebiotic X increases calcium absorption’. Whether the use of the term ‘prebiotic(s)’ is assessed as a function claim, disease risk reduction claim or therapeutic claim depends on the specific and measurable health effect supported by scientific evidence and the overall impression created by the labelling and advertising of the food.”

“Because prebiotics are non-digestible carbohydrates, they can be considered as fibre. However, use of the term ‘prebiotic(s)’ must not be made in conjunction with a fibre claim in such a way as to imply that all fibres are ‘prebiotic(s)’, as this is not the case.” (CFIA 2025)

APPENDIX 2 – EVIDENCE REQUIREMENTS FOR PREBIOTIC RELATED CLAIMS

The evidence requirements described below are for low risk prebiotic claims used in this monograph. The standards have been constructed based on the premises and principles outlined in the Pathway for Licensing Natural Health Products Making Modern Health Claims guidance document and in consideration of the various prebiotic definitions and considerations available.

Note: The requirements are currently intended to uphold the notion of selectivity (i.e., increasing beneficial bacterial levels with limited/no growth of problematic/pathogenic bacteria). The requirements are also currently intended to uphold the notion of beneficial physiological effects (i.e., a significant beneficial shift to the microbiota balance is currently considered sufficient).

For the claims

- A source of prebiotic(s)
- Helps stimulate the growth of healthy bacteria (such as bifidobacteria) in the intestine/gut
- A source of prebiotic(s) that helps support and maintain a healthy digestive system

the minimum evidence requirements used in constructing this monograph included:

- A – Data from reliable scientific literature sources indicating that the medicinal ingredient's active component is
 - Resistant to digestion
 - Not absorbed
 - Fermentable (i.e., chemically changed by microbes)
 - B – Data that demonstrates the medicinal ingredient's active component has a beneficial effect on microbiota
 - This can be measured via significantly increased bifidobacteria/beneficial intestinal bacteria levels (e.g., fecal measurement) alongside limited effect on pathogenic bacteria
 - Effective dose can be derived from this data
- OR
- This can also be demonstrated with non-significantly increased bifidobacteria/beneficial intestinal bacteria levels (e.g., fecal measurement), but **only** when used alongside beneficial clinical data (described in point C below)
 - In this case, effective dose is derived from the clinical data (point C)
- OR
- Animal/*in vitro* data showing significant improvement in bifidobacteria/beneficial intestinal bacteria can also **only** be used alongside beneficial clinical data (described in point C below)
 - In this case, effective dose is derived from the clinical data (point C)



- C – (only required if specified above in B) Data that demonstrates the medicinal ingredient's active component has a beneficial clinical effect on the gastrointestinal tract and/or digestion
 - A significant benefit is demonstrated on any aspect of the digestive system

Notes

- For a Class III application (i.e., non-compendial), significant beneficial increases in fecal short-chain fatty acids (SCFAs) will be taken into consideration for efficacy [i.e., total or individual SCFAs (e.g. butyrate, propionate, and/or acetate)]. However, this is **only** when used alongside beneficial clinical data (described in point C).
- Study from the elderly and those with health conditions is considered applicable as it reflects how a healthy state can be supported. Bifidobacteria/beneficial intestinal bacteria levels increase more easily in the elderly and in those with dysbiosis (and this may not be observed in otherwise healthy individuals).