For the most valuable in life.

Scientific update

L. fermentum CECT5716 in HiPP COMBIOTIC® formulae

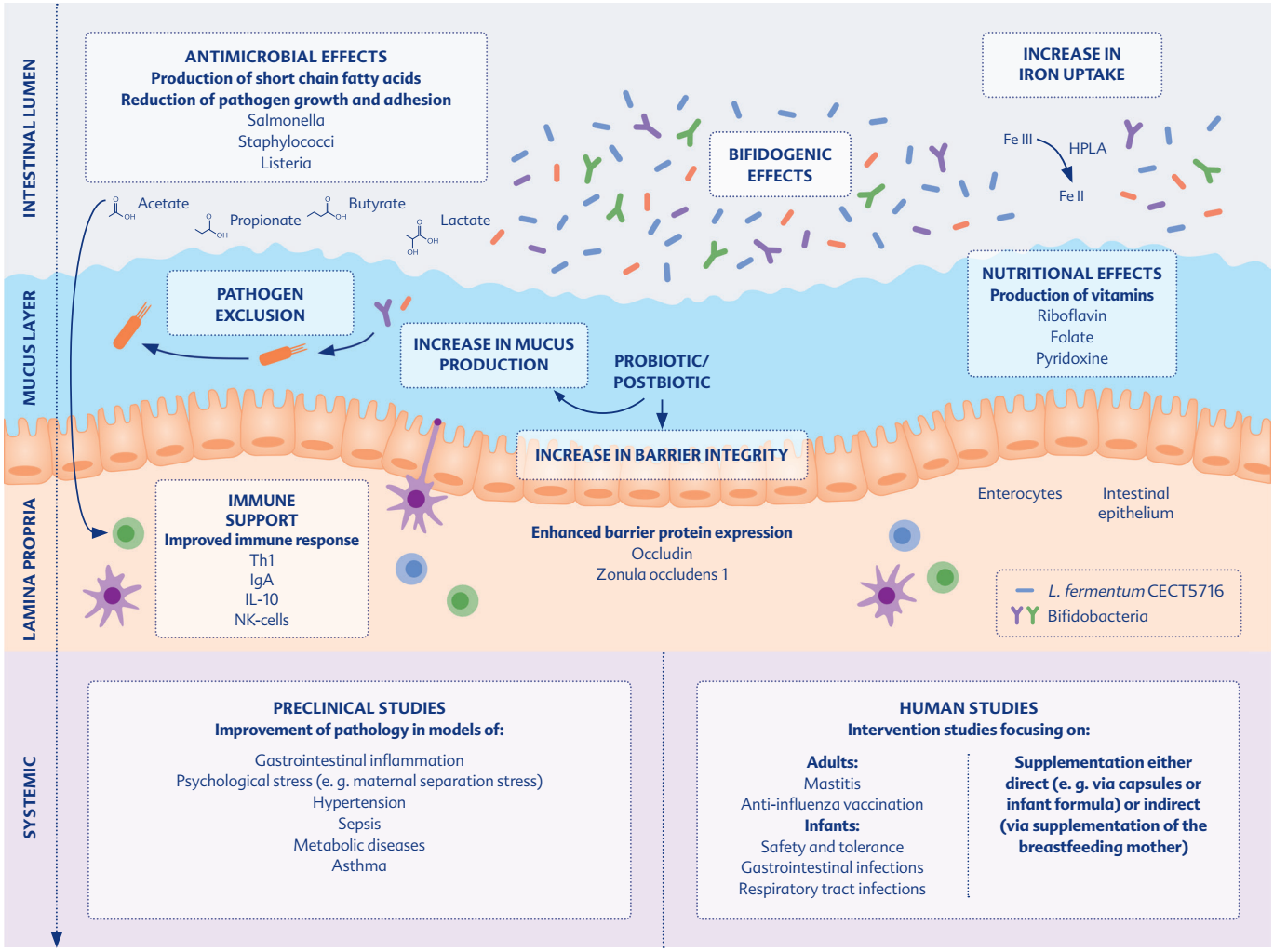
Three current reviews

Information for healthcare professionals

Review 1

L. fermentum CECT5716: Clinical potential of a probiotic strain isolated from human milk[1]

Limosilactobacillus fermentum CECT5716 is a probiotic strain originally isolated from human milk. A review from 2023 provides insights into the **mechanisms and health-promoting effects of this probiotic:** both on the intestinal microbiota and on the development of gastrointestinal and respiratory infections in infants, *L. fermentum* CECT5716 shows positive effects.



Probiotic and postbiotic mechanisms and effects of *L. fermentum* CECT5716

IgA: Immunoglobulin A; IL-10: Interleukin 10; HPLA: p-hydroxyphenyllactic acid; Th1: T-helper type 1; NK-cells: Natural killer cells

Antimicrobial effects

- ✔ production of short-chain fatty acids
- ✔ improved immune response
- ✔ pathogen exclusion

Probiotic effects

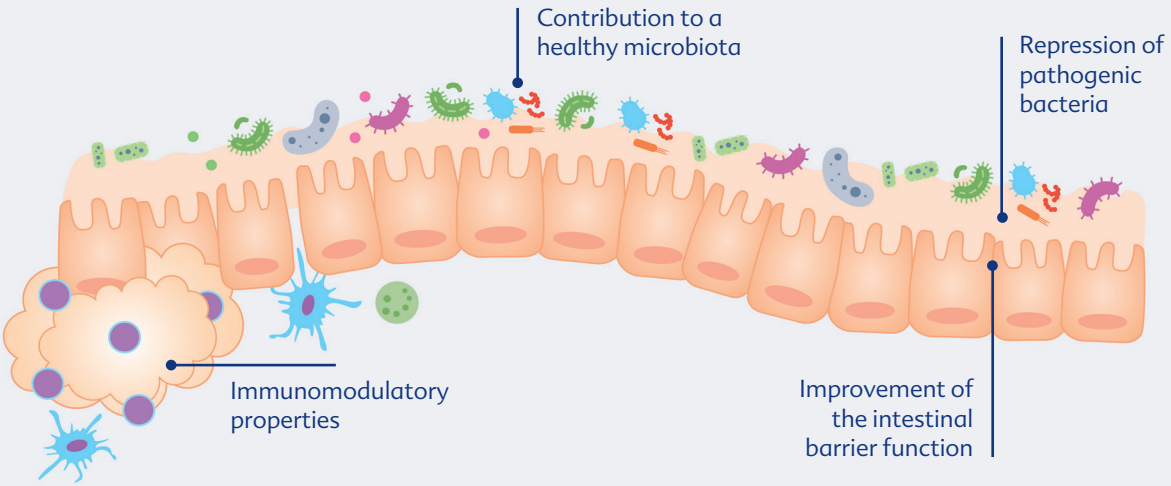
- ✔ increased growth of bifidobacteria
- ✔ increase in mucus production
- ✔ increase in barrier integrity

Nutritional effects

- ✔ supports vitamin synthesis (folate, B_2, B_6)
- ✔ increased iron absorption

Review 2

Mechanisms and therapeutic outlook for *L. fermentum* CECT5716[2]



Selection of positive mechanisms of *L. fermentum* CECT5716 in the intestine

In clinical and preclinical models, *L. fermentum* CECT5716 has proven its:

- ✔ anti-inflammatory effects
- ✔ contribution to the innate and acquired immune response
- ✔ immunomodulatory properties

Beneficial effect on:

- ✔ experimental colitis
- ✔ metabolic syndrome (including obesity, hyperglycaemia, hyperlipidaemia and high blood pressure)

Human studies were also able to show the positive effects of *L. fermentum* CECT5716 administration in areas such as:

- ✔ mastitis prevention and treatment including the relief of inflammation associated symptoms
- ✔ enhancement of the effect of influenza vaccinations
- ✔ less gastrointestinal and respiratory infections in infants

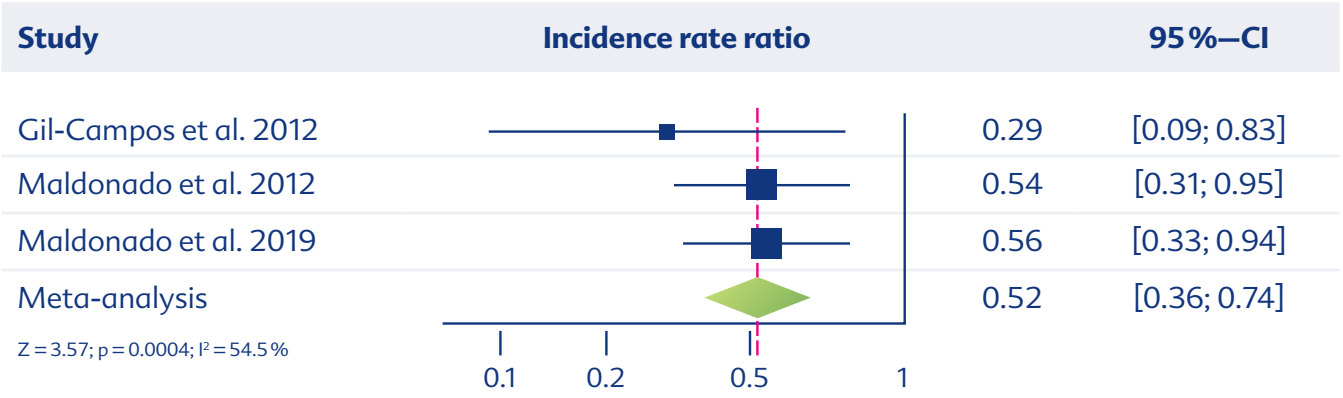
„*L. fermentum* CECT5716 has become one of the most promising probiotics and it has been described to possess potential beneficial effects on inflammatory processes and immunological alterations."

Review 3

L. fermentum CECT5716 proves the preventive effect on gastrointestinal infections[3]

A systematic review and meta-analysis has explored whether early administration of ***L. fermentum* CECT5716** is **an effective preventive therapy for gastrointestinal infections.**

In the three randomised, controlled, double-blind studies included in this meta-analysis, the infants in the intervention group each received a formula fortified with *L. fermentum* CECT5716. The incidence rate ratio of **gastrointestinal infections was significantly reduced (-48%)** compared to those who received a formula without this probiotic strain.



Meta-analysis of the incidence rates of gastrointestinal infections in infants in relation to the administration of *L. fermentum* CECT5716

natural probiotic: *L. fermentum*

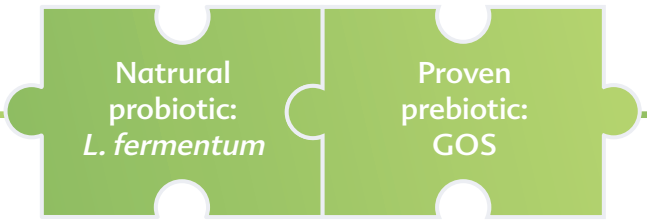
HiPP is the only formula brand to rely on an unmodified natural lactic acid culture from human milk*: ***Limosilactobacillus fermentum* CECT5716.**[4–6]

- a primary coloniser of the intestine[7]
- supports a healthy intestinal microbiota[8]
- contributes to modulation of immune response[9, 10]
- proven to be safe[11, 12]

*Human milk contains a large number of natural lactic acid cultures that can vary from mother to mother.

An ideal combination

The synergistic combination of *L. fermentum* CECT5716 and GOS (galacto-oligosaccharides) enhances the **beneficial effect** of *L. fermentum* CECT5716.



The synbiotic combination

- ✔ increases the number of beneficial bacteria in the intestine[8]
- ✔ significantly reduces gastrointestinal and respiratory infections[8, 13, 14]
- ✔ is significantly better than only using prebiotics (GOS)[8, 13]
- ✔ is easy to digest[8, 13]

HiPP Research Group on Human Milk: understanding nature's example

HiPP Research Group on Human Milk

We consult experts to take into account the latest findings when developing HiPP COMBIOTIC® formulae.

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Section: Studies

References: 1 Ozen M et al. Nutrients. 2023; 15(9): 2207. **2** Rodríguez-Sojo MJ et al. Nutrients 2021; 13: 1016. **3** Pastor-Villaescusa B et al. Microorganisms 2021; 9: 1412. **4** Martin R et al. J Pediatr 2003; 143(6): 754–758. **5** Martin R et al. J Hum Lact 2005; 21(1):8–17. **6** Lara-Villoslada F et al. Br J Nutr 2007; 98(suppl 1): 96–100. **7** Blaut M & Loh C in: Bischoff SC: Probiotika, Präbiotika und Synbiotika; Thieme 2009; 2–23. **8** Maldonado J et al. J Pediatr Gastroenterol Nutr 2012; 54(1): 55–61. **9** Olivares M et al. Nutr 2007; 23(3): 254–260. **10** Perez-Cano FJ et al. Immunobiology 2010; 215(12): 996–1004. **11** EFSA: The EFSA-Journal 2007; 587: 1–16. **12** FDA. 2015; GRAS Notices GRN No. 531. **13** Gil-Campos M et al. Pharmacol Res 2012; 65(2): 231–238. **14** Piloquet et al. Efficacy and safety of a synbiotic infant formula for the prevention of respiratory and gastrointestinal infections: A randomized controlled trial. (accepted for publication in AJCN).

HiPP ORGANIC COMBIOTIC®

Science and nature hand in hand

- Appropriately low protein content
- Proven prebiotic: GOS from organic lactose
- Natural probiotic *Limosilactobacillus fermentum* CECT5716
- Omega-3 and omega-6 LCP fatty acids
- Metafolin®* for natural development

HiPP COMBIOTIC® 10 YEARS

Safety and benefit proven by clinical studies

*Metafolin® is a registered trademark of Merck KGaA, Darmstadt, Germany.

Important information: Breastfeeding is best for babies. If breastfeeding is not possible, formulae can be used upon consultation with a paediatrician.

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