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Probi Review Highlights Potential of LP299V Probiotic Strain to Support Iron Absorption

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Iron deficiency is the worldâ??s most prevalent micronutrient deficiency, affecting an estimated two billion people globally

Probi, part of Symrise Group, has highlighted new evidence on the potential role of the well-characterised probiotic strain Lactiplantibacillus plantarum 299v (LP299V) in supporting iron absorption and iron status.

A comprehensive review authored by researchers at Probi has been accepted for publication in Frontiers in Nutrition. The review brings together evidence from 10 peer-reviewed studies, including research involving populations with increased iron requirements, and examines the potential mechanisms through which LP299V may influence non-heme iron bioavailability.

Iron deficiency is the world's most prevalent micronutrient deficiency, affecting an estimated two billion people globally. While iron supplementation remains a standard approach, poor absorption of non-heme iron and gastrointestinal side effects associated with iron replacement can affect adherence.

According to the review, validated isotope studies reported relative increases of approximately 20 per cent to 50 per cent in fractional non-heme iron absorption across different dietary contexts when LP299V was used. Randomised controlled trials have also investigated its impact on iron status among women of reproductive age, pregnant women and female athletes with low iron stores.

The review explores several complementary mechanisms that may contribute to LP299V's effects on iron bioavailability. These include the production of organic acids that may lower intestinal pH and improve iron solubility, potential reduction of dietary inhibitors such as phytates, and increased expression of the gene for DCYTB, an enzyme involved in converting ferric iron into the more bioavailable ferrous form.

However, the researchers noted that evidence regarding the probiotic's effects on DMT1, a key iron transporter, remains inconclusive.

The review also examines the relationship between LP299V, intestinal barrier function, short-chain fatty acid production and inflammation. These mechanisms may contribute to the strain's effects on iron uptake, as well as its reported ability to reduce gastrointestinal side effects associated with iron replacement.

"Iron status depends not only on how much iron is consumed, but also on how effectively it is absorbed," said Brandy Webb, N.D., Scientific Affairs Manager at Probi. She added that the evidence positions LP299V as a bioavailability enhancer that can complement dietary iron and iron supplementation rather than replace them.

The research has also received industry recognition, with Probi's iron absorption concept winning the NutraIngredients Award for Innovation in Women's Health in Europe, North America and Asia in 2025.

The findings add to the growing body of research exploring the potential of targeted probiotic strains to improve nutrient bioavailability and support nutritional health, particularly among population groups with increased iron requirements.