

Scientists use bacteria for fortifying food with riboflavin

08 September 2017 | News

Although found in various foods like eggs, green vegetables, milk and meat, there are numerous cases of riboflavin or vitamin B2 deficiency occurring on a regular basis. To help solve this, scientists have been looking for ways to supplement the intake of this vitamin through fortified and bio-enriched foods like milk, bread and whey.



Lactobacilli is an ideal candidate for riboflavin-fortification of foods.

Although found in various foods like eggs, green vegetables, milk and meat, there are numerous cases of riboflavin or vitamin B2 deficiency occurring on a regular basis. To help solve this, scientists have been looking for ways to supplement the intake of this vitamin through fortified and bio-enriched foods like milk, bread and whey.

Several bacteria are known to produce riboflavin, but among these, lactic acid bacteria or lactobacilli is an ideal candidate for riboflavin-fortification of foods, primarily because fermentation of Lactobacilli is already an embedded step in the production of various food products that we regularly use.

Now, scientists at National Dairy Research Institute, Karnal, and Hefei University of Technology, China have investigated the influence of incubation time, growth medium and the use of different strains of lactobacilli on the expression of the riboflavin (Rib) genes, which are responsible for riboflavin biosynthesis in these bacteria.

The researchers isolated wild type strains of lactobacilli from various niches like human faeces, fermented bamboo shoots, and curd, and found that lactobacilli isolated from fermented bamboo shoots exhibited the highest riboflavin producing properties. Their study also revealed for the first time ever, the mRNA expression profile of four bacterial Riboflavin (Rib) genes, in different growth mediums like milk, whey and riboflavin-free media.

They further propose that milk and whey can be used for development of riboflavin enriched fermented products, as well as suggest the development of lactobacilli isolated from fermented bamboo shoots into functional bamboo shoot foods. Such interventions could lead to foods which are more enriched and fortified with riboflavin and could help prevent or treat riboflavin deficiencies in the future.