

Urea in breast milk important for baby

Danone is considering adding urea to powdered milk for babies based on research by Patrick Schimmel. The microbiologist obtained a PhD on 6 December for his study of the nitrogen metabolism of gut bacteria in babies.

That breast milk contains urea was a known fact, but it was thought to simply be a breakdown product of the mother's metabolism. Patrick Schimmel (Microbiology) has shown that the urea serves a purpose for the baby. 'Bacteria need nitrogen to grow,' he explains. 'They get that nitrogen from the urea in breast milk.'

Bifidobacteria are beneficial gut bacteria

Beneficial gut bacteria use urea as a source of nitrogen for growth

that help the baby digest the breast milk and perhaps also train its immune system. In an *in vitro* experiment, Schimmel showed that these bacteria

are able to convert urea very efficiently.

That means the bacteria perform a renal function at a time when the baby's kidneys still have to get going properly, explains the microbiologist. 'Too much urea can be harmful for the baby, and the bacteria help prevent that.'

New formula

Schimmel's research has given formula milk manufacturers pause for thought.

Breast milk contains less protein compared with cow's milk, but has a lot of other nitrogen sources, including urea and free amino acids. But cow's milk forms the basis for most formula milk for babies. Schimmel: 'Danone Nutricia Research, the partner in my project, has a patent for adding urea to formula milk, or for checking the amount of urea — because too much urea is risky as well.' ss