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# Study identifies potential new probiotics for supplements and functional foods

By Stephen Daniells , 01-Feb-2013

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**Spanish scientists have identified three bacterial strains that have ‘the potential to be used as probiotics in functional foods’ due to their ability to inhibit the growth of pathogenic strains like E. coli and Salmonella.**

According to findings published in the *British Journal of Nutrition*, the potential probiotics -- *Lactobacillus paracasei* CNCM I-4034, *Bifidobacterium breve* CNCM I-4035 and *Lactobacillus rhamnosus* CNCM I-4036 – were isolated from the feces of breastfed infants.

The three potential probiotic strains secreted substances that inhibited the growth of less desirable strains, like *Escherichia coli*, *Salmonella* and *Shigella*.

“These results suggest that these probiotic strains may produce substances that are either permissive or harmful to enteropathogens, depending on the neutralization, concentration and culture time of the supernatants,” wrote the researchers, led by Angel Gil from the University of Granada.

## Probiotics

According to the FAO/WHO, probiotics are defined as ‘live microorganisms which when administered in adequate amounts confer a health benefit on the host’.

The effects of probiotics are known to be strain specific and that was the case in this news study, with each strain having different effects on *E. coli*, *Salmonella*, and *Shigella*.

The new paper is a continuation of the Granada-based scientists’ earlier work of isolating the strains from infant feces.

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This earlier work, also published in the *British Journal of Nutrition* (doi: 10.1017/S0007114512005211), reported that the strains were susceptible to antibiotics and did not produce undesirable metabolites.

The new study tested their activity against bacterial strains that may cause gastrointestinal issues. The researchers isolated the liquid products from probiotic broth (supernatant) and incubated the pathogenic bacteria with this broth.

Results showed that, after 17 hours of co-culture, the broths inhibited the growth of E. coli, Salmonella and Shigella by up to 40, 55 and 81%, respectively.

The next stage of the development work of these potentially beneficial bacteria is to elucidate the compounds in the broths that are conferring the anti-microbial activity, they said.

Source: *British Journal of Nutrition*  
 January 2013, Volume 109, Supplement S2, pp S63 - S69, doi: 10.1017/S0007114512005600  
*“Competitive inhibition of three novel bacteria isolated from faeces of breast milk-fed infants against selected enteropathogens”*  
 Authors: S. Munoz-Quezada, M. Bermudez-Brito, E. Chenoll, S. Genovés, et al.

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