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Commissioned by:
Winclove Probiotics
Hulstweg 11
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The Netherlands

Goal

Determination of gastrointestinal survival of 6 probiotic products.

Products

Products were received 25-02-2013. All products were blinded and numbered from 1-6 and packed in capsules or sachets.

Capsules: product 1, 2, 4 and 5

Sachets: product 3 and 6

Method

Gastrointestinal survival of the 6 probiotic products was determined using an *in vitro* simulation model based on the gastrointestinal model developed by the University of Maastricht as described by Timmerman *et al.*¹. In this model, pH and the addition of digestive enzymes (pepsin, pancreatin and bile) are regulated to simulate passage through the stomach and small intestine. Total cell count was measured at 4 different time points: after rehydration (T=15), after stomach simulation (T=75), after the addition of bile and pancreatin (T=180) and 3 hours (T=360) after bile salt deactivation (i.e. end of small intestine simulation). Total cell count was determined by inoculation de Man, Rogosa and Sharpe (MRS) agar plates which were then incubated under anaerobic conditions at 37°C for 48 hours. All experiments were performed in duplicate on two separate days.

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Results

The figures shown below indicate the percentage survival (Figure 1) and the total cell count (Figure 2) of the 6 products at the 4 different time points. Actual numbers are included as supplemental information.

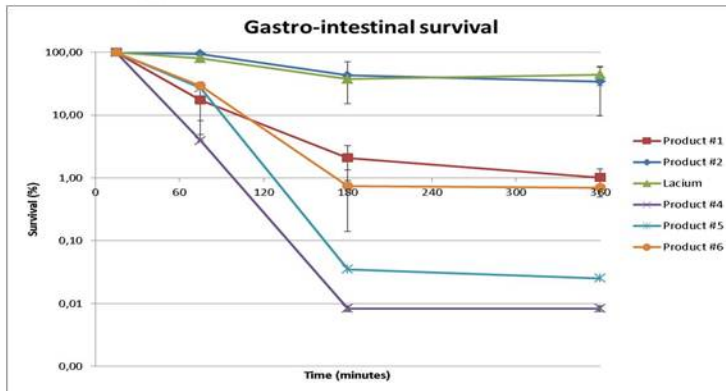


Figure 1: Percentage of survival (mean \pm SD).

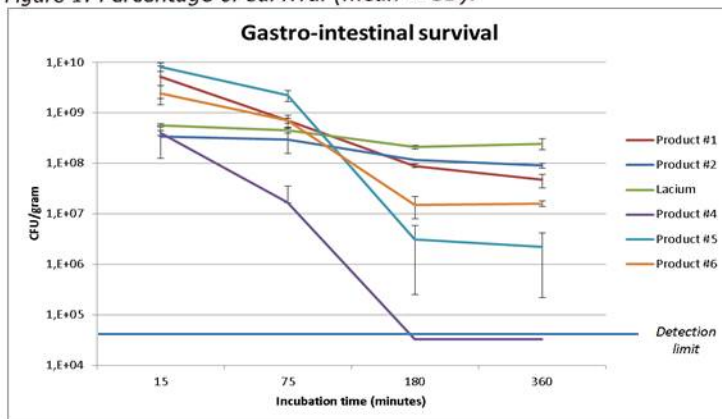


Figure 2: Total cell count in cfu/gram (mean \pm SD).

Literature

¹ Timmerman HM, *et al.* Design of a multispecies probiotic mixture to prevent infectious complications in critically ill patients. *Clin Nutr* 2007;26:450–9.

With kind regards:

Hauke Smidt, PhD
Professor in Complex Microbial Ecosystems