

InterFase® and InterFase Plus® Tough on Pathogenic Biofilm; Gentle on Healthful Biofilm

The ability of Klaire Labs™ InterFase® and InterFase Plus® patent-pending antibiofilm enzyme formulations to disrupt pathogenic biofilm has been previously documented, but their actions on biofilm produced by beneficial microorganisms remained in question. We are pleased to report that we have now developed reproducible models of *Bifidobacterium* and *Lactobacillus* biofilms to evaluate these effects.

The effect of InterFase® and InterFase Plus® on healthful biofilm has been studied using probiotic species that are found in the normal human gastrointestinal microflora cultured in the Calgary Biofilm Device. The species researched were *Bifidobacterium bifidum*, *B. breve*, *B. longum*, *Lactobacillus casei*, *L. rhamnosus*, and *L. salivarius*. Klaire Labs™ has found that InterFase® and InterFase Plus® have no significant adverse effects on healthful biofilm at clinically relevant concentrations. The data are summarized below.

Log Reduction (or Increase) at Concentration of 0.34 mg/mL

Strain	InterFase®	InterFase Plus®
<i>Bifidobacterium bifidum</i>	(0.87)	(0.63)
<i>Bifidobacterium breve</i>	3.18	3.18
<i>Bifidobacterium longum</i>	0.81	1.07
<i>Lactobacillus casei</i>	(0.15)	(0.54)
<i>Lactobacillus rhamnosus</i>	0.61	0.47
<i>Lactobacillus salivarius</i>	0.08	(0.19)

None of the changes were statistically significant when compared to the growth controls.

InterFase® and InterFase Plus® have now been shown to disrupt pathogenic biofilm associated with the following organisms:

- Escherichia coli* O157:H7
- Gardnerella vaginalis* ATCC 14018
- Helicobacter pylori* ATCC 43504
- Klebsiella pneumoniae* ATCC 4352
- Pseudomonas aeruginosa* ATCC 27853
- Pseudomonas aeruginosa* PAK FK4-003
- Staphylococcus aureus* ATCC 29213
- Staphylococcus aureus* MRSA 399
- Staphylococcus aureus* MRSA U of C #13
- Streptococcus pneumoniae* ATCC 10015
- Streptococcus pyogenes* ATCC 10096
- Candida paratropicalis* ATCC 99916

However, as tough as InterFase® and InterFase Plus® are on pathogenic biofilm, they have no effect on healthful biofilm made by probiotic and gut microflora *Bifidobacterium* and *Lactobacillus* species.

