



Probiotics

Probiotics are live bacteria and yeasts that are good for your health, especially your digestive system. We usually think of bacteria as something that causes diseases. But your body is full of bacteria, both good and bad. Probiotics are often called "good" or "helpful" bacteria because they help keep your gut healthy.

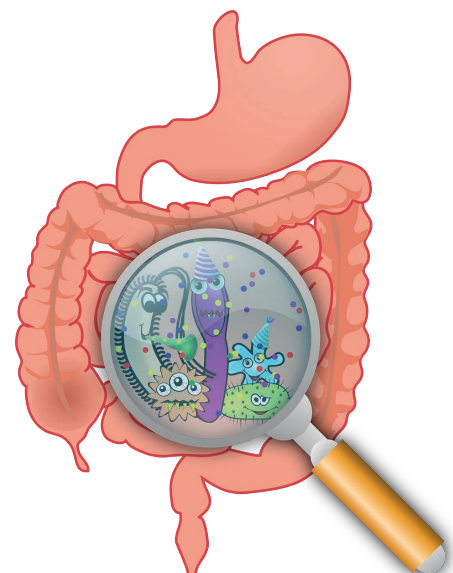
How Do They Work?

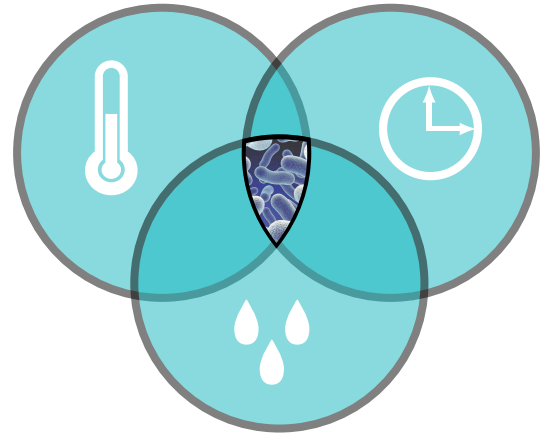
When you lose "good" bacteria in your body after taking antibiotics, probiotics can help replenish them. Probiotics can help balance your "good" and "bad" bacteria to keep your body working like it should. Probiotics helps to restore your gut flora and also protects your gut from pathogenic bacteria.

Probiotics Benefits

Probiotics may help treat common conditions such as:

- 1) Irritable bowel syndrome (IBS)
- 2) Inflammatory bowel disease (IBD)
- 3) Antibiotic-related diarrhea
- 4) Skin conditions, like eczema
- 5) Urinary (UTI) and vaginal health
- 6) Preventing allergies and colds
- 7) Oral health
- 8) Improve Mental Health
- 9) Infectious diarrhea (from viruses, bacteria, or parasites)





Factors Affecting Probiotic Stability

AHC™ Enhances Stability in Probiotics

The AHC™ technology was developed by Dr. Teow Sun Soo a professor with 30 years of experience in the field of Medical Bacteriology and Clinical applications of friendly bacteria.

AHC™ enhances the stability of probiotics cultures, live harvested probiotic cultures goes through a VBNC conversion process to minimize the metabolic activity of probiotic cultures.

AHC™ prolongs and enhances the stability, viability and efficacy of probiotic cultures.

AHC™ Benefits

- 1) AHC™ strains are heat resistant up to 45° C
- 2) AHC™ improves storage stability, efficacy, and viability of probiotics.
- 3) AHC™ strains possesses shelf life of 3 years or more without refrigeration.

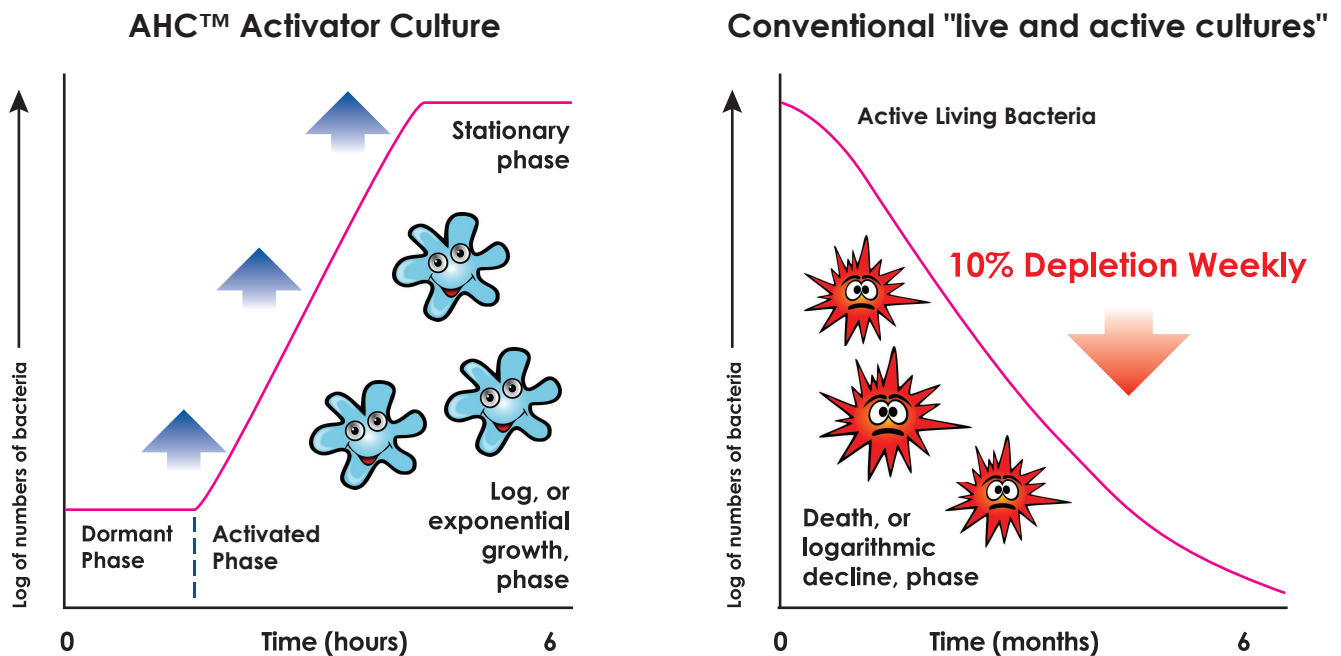


Synoptic determination of living/dead and active/dormant bacteria

Active Living Bacteria	- Culturable	CFU Not Detectable
Dead Bacteria	- Non Culturable	CFU Not Detectable

AHC™ VBNC Bacteria	Culturable after "Activation"	CFU Detectable after "Activation"
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AHC™ Activator Cultures vs Live Active Cultures



AHC™ Activator Cultures (VBNC)

Dormancy refers to a period of an living organism's life, during which it's inactive at a metabolic level. This means the bacteria stops proliferating; in fact, most physical activity usually stops.

Dormant bacteria may appear to be dead, but it is capable of returning to an active, non-dormant state when optimal growth conditions are met.

Causes of Dormancy

When threatened by extreme environmental conditions, bacteria automatically enters a process of dormancy for their own survival and protection. Such environmental conditions include high temperatures, extremely high or low pH levels, excess or lack of oxygen, or chemical threats such as antibiotics. Dormancy is only a resting period for the bacteria, when the environmental conditions are right again for a particular bacterial species, it can emerge from dormancy and begin cell growth and reproduction.

References

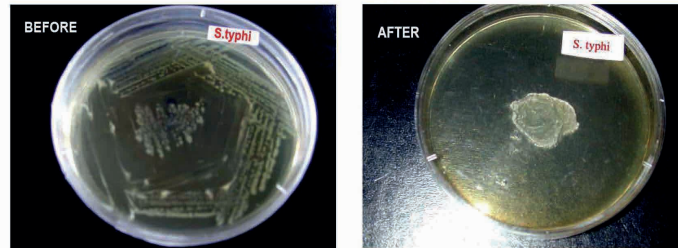
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3. J.D. Oliver, The viable but nonculturable state and cellular resuscitation, University of North Carolina, Charlotte, NC 28223 USA. *Front Microbiol.* 2014; 5: 258.
4. Mateja Kramer & Nataša Obermajer & Bojana Bogovič Matijašić & Irena Rogelj & Vojko Kmetec, Quantification of live and dead probiotic bacteria in lyophilised product by real-time PCR and by flow cytometry. *Appl Microbiol Biotechnol* DOI 10.1007/s00253-009-2068-7



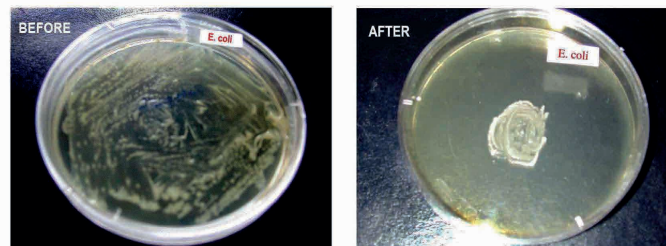
Antibiotic and food poisoning from pathogens

Rampant and prolong use of antibiotic can lead to resistance of antibiotics in the human body. Moreover failure to restore digestive flora eradicated from antibiotics treatments can weaken our defense system, exposing us to all sorts of digestive disorder caused by pathogenic microorganisms.

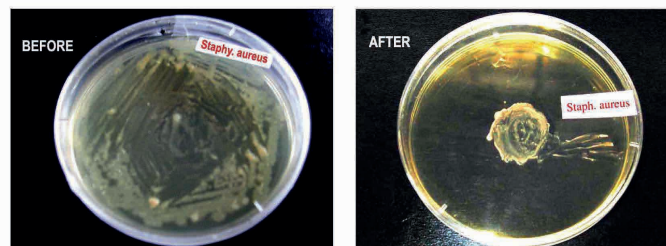
AHC™ dormant cultures are effective in inhibiting the growth of:



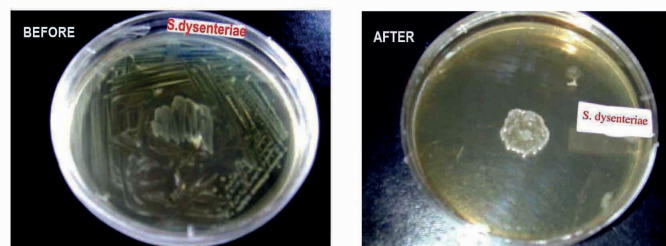
A) **Salmonella typhi** - S.typhi has killed over 600,000 people annually all over the world. It is a deadly bacterial disease that causes typhoid fever and is transmitted through food and water. It has become an epidemic in South Asian countries where sanitation is lacking.



B) **Escherichia coli** - E. coli are a large and diverse group of bacteria. Although most strains of E. coli are harmless, others can make you sick. Some kinds of E. coli can cause diarrhea, while others cause urinary tract infections, respiratory illness and pneumonia, and other illnesses.



C) **Staphylococcus aureus** - S. aureus is a bacterium that is a member of the Firmicutes, and is frequently found in the human respiratory tract and on the skin. Although S. aureus is not always pathogenic, it is a common cause of skin infections, respiratory disease and food poisoning.



D) **Shigella dysenteriae** - S. dysenteriae, spread by contaminated water and food, causes the most severe dysentery (bloody diarrhoea) because of its potent and deadly Shiga toxin, but other species may also be dysentery agents. Contamination is often caused by bacteria on unwashed hands during food preparation, or soiled hands reaching the mouth.