**Probiotic Oral Dosage Form – Literature Review**

To design an adequate and successful probiotic, one must take care and precision in the strains that they select. Collins et. al. have outlined 12 specific properties of what they consider to be a “good probiotic strain” (Collins et. al., 1998):

1. Human origin
2. Possession of GRAS status
3. Possession of a desirable antibiogram profiles (e.g. metronidazole resistance)
4. Production of antibacterial factors antagonistic for potentially pathogenic microorganisms, particularly invasive gram-negative pathogens.
5. Desirable metabolic activity
6. Technologically suitable
7. Non-pathogenic even in immunocompromised hosts
8. Non-inflammatory-promoting microorganisms
9. Survival in association with the adult mucosal immune system
10. Immunostimulatory for the mucosal immune system with appropriate cytokine release
11. Antimutagenic and anticarcinogenic properties.
12. Potential vehicle for the delivery of recombinant proteins and peptides in a site-specific fashion to the human gastrointestinal tract.

There are currently several identified strains that meet the above criteria and are frequently used in probiotic consumer products. The two most common are *lactobacillus acidophilus*, and bifidobacteria (Saarela, 2000). There are safety considerations when it comes to the two aforementioned strains, however. It is well known that the rapid proliferation of bacteria leaves them with a wide range of opportunities to develop antibiotic resistance. This coupled with the world’s increasingly prevalent and haphazard use of antibiotics makes the concern of our strains developing resistant a concern. It is known that lactobacilli possess many natural resistances, however, these resistances are not transmittable, and they do not usually form a safety concern (Charteris et al., 1998). Bifidobacteria, although desired for their intrinsic low pH resistance, they may be of concern given their additional intrinsic resistance to common antibiotics. However, studies reveal that it is susceptible to vancomycin treatment and dosing (Edlund at al., 1997).