

# Smart Bac 6™

For Healthy Calves™



## Pathogen Management + Immune Modulator + Gut Development

**A calf is born with a sterile gut.** At birth, a calf is exposed to pathogens from the dam and the environment. Gastrointestinal infections of newborn calves are a serious problem with over 50% of calf deaths attributed to scours.

**Exclusive only to Priority Int'l Animal Concepts, Smart Bac 6™ includes six smart bacteria for:**

- **Pathogen Management** – Three specialized *Bacillus subtilis* strains help reduce the growth of *Clostridium perfringens*, *Salmonella*, *E. coli* and other pathogens that cause scours in calves
- **Immune Modulator** – Newly discovered *Lactobacillus brevis* 1E-1 regulates the immune response in the gastrointestinal tract, by quieting the pro-inflammatory response responsible for the symptoms (scours) caused by pathogenic infections
- **Gut Development** – *Lactobacillus* strains A4000h and A2020 and MOS aid in establishing a population of beneficial bacteria that help the calf establish a functioning rumen and protects the calf from disease-causing pathogens

6  
6 Branded  
Strains:

A4000h™

A2020™

B5000h™

B5005h™

B5150h™

1E-1

1st  
Ingredient™

## Features and Branded Strains

### Branded Strains

- Priority branded strains, *Lactobacillus acidophilus* A4000h and A2020:
  - Priority branded strains A4000h™ and A2020™. These are naturally occurring strains of bacteria that function in the rumen and intestinal tract. They play a major role in protecting the animal from pathogen invasion by producing compounds called bacteriocins that kill or inhibit pathogens.
- *Bacillus subtilis* B5000h, B5005h, and B5150h were selected for their competitive inhibition ability against a library of bacterial scour causing organisms (more than 1200 isolates from over 200 genotypes)
- In vitro inhibition testing demonstrated:
  - 181 *Salmonella* isolates representing 64 genotypes including *Salmonella* isolates in the pathogen library [181 isolates from 64 genotypes – includes 13 *Salmonella enterica* serotypes (*S. angona*, *uganda*, *newport*, *montevideo*, *derby*, *choleraesuis*, *Brandenburg*, *dublin*, *mbandaka*, *anatum*, *muenster*, *saintpaul* and *typhimurium*)]

### Percent inhibition of surveyed scour causing bacterial isolates in pathogen library

Pathogens	Isolates	Genotypes*	Inhibition of Genotypes
<i>Salmonella</i>	181	64	99%
<i>E. coli</i>	126	17	100%
<i>C. perfringens A</i>	917	155	89%

\*Genotype = isolate family



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## Pathogen Management + Immune Modulator + Gut Development

- Neonatal calf trials have shown a decrease in calves treated during the peak scour challenge period
- *Lactobacillus brevis* 1E-1
  - An immunomodulator that:
    - » Controls growth-compromising inflammation by reducing anti-inflammatory response at the gastrointestinal tract
    - » Has been shown to promote T-cell development at the gastrointestinal tract (T-cells are a group of white blood cells that act like soldiers to search out and destroy targeted invaders)
- Also features MOS
  - Mannon oligosaccharide known to bind pathogens

Number of calves treated for scours during week of peak scours			
Trial (Calves/Group)	Non-treated control group	Smart ONE treated group	% Reduction in Treatment
1 (75 calves)	23%	11%	53%
2 (60 calves)	33%	12%	30%
3 (100 calves)	71%	68%	4.5%

## Additional Benefits

- Scientific strain selection using “cutting edge” DNA technology
- Developed using new molecular-based methods that identify (select) unique strains of bacteria (found in the rumen and/or intestinal tract) that correlate to specific (digestive) functions in the animal. Including: RAPD, Multiplex PCR, DGGE, SSH, Real Time PCR, T-RFLP, FISH, Microarray, Multivariate Statistics/Ordination, Bioinformatics)
- Includes special moisture scavenger agents to control moisture for longer shelf life.
- BQS (Quality) certified
  - 21-Step QC process
  - Just-in-time manufacturing
  - Genetic fingerprinted
  - Purity, count, and genetic tested
  - High temperature stability tested



Genotype Tested  
Genetic Fingerprinted

## Directions for Use: (see label)

To learn more about Smart Bac 6™  
or to start feeding, call your  
local veterinarian or representative.



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