

## Product Immunology Breakdown: Two Technologies in One Bottle

**Bacterin:** Totally Naked Mutant Core that does not have the ability to grow Lipopolysaccharide (LPS). The core has a completely exposed cell wall that is common to all gram-negative bacteria.




**Toxoid:** Separate component that is completely different than the bacterin. It is not just a loose toxin that has separated from the bacterin. It has been completely detoxified, yet retains its mitogen properties through stimulation of certain Toll-like receptors (TLRs). Known by the trade name Immune Plus it is a true Immunostimulant.

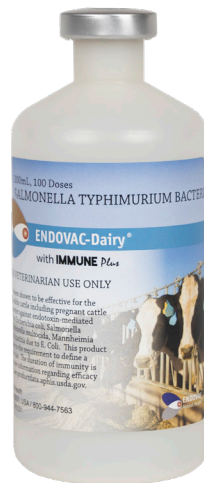
### Application:

The cell walls of all gram-negatives are effectively the same, it is only LPS that differentiates them as separate species and serotypes. Creating a gram-negative mutant that does not have the ability to grow LPS means that ENDOVAC-Dairy can actually make antibodies for the epitopes on the cell wall. Normal gram-negative vaccines or even the J-5 cores, cannot do this. The antigenicity of the LPS is too strong and the antigen presenting cells completely ignore the cell wall. By utilizing this unique gram-negative mutant that is completely devoid of LPS and coupling it with a true immunostimulant, ENDOVAC-Dairy is able to make antibodies for epitopes all over the exposed cell wall.




## Two Technologies, One Bottle

### Endovac Vaccine

-  Unprecedented efficacy
-  Does not create large milk drop because it has zero active endotoxins
-  Unrivaled pathogens protected



### Immune Plus

-  Activated immune system for stronger responses
-  Only Immunostimulant included in a vaccine
-  Increases antibodies, lymphocytes, and neutrophils