

Bacillus cereus prescreening and ELISA drug detection reduce the risk of bacterial and chemical contamination of donor human milk

Milk banks accredited by the Human Milk Banking Association of North America (HMBANA) adhere to the Food Safety Modernization Act. Food Safety Plans identify biological, physical, and chemical hazards and their associated preventive controls.

B. Cereus prescreening

Raw milk pools from individual donors are prescreened for *Bacillus cereus* prior to pasteurization. Post pasteurization samples are sent to a third party A2LA accredited microbiology laboratory to verify effective hazard control.



Figure 1. *B. cereus* rods isolated from donor milk (phase contrast microscopy 400x).



Figure 2. Milk is plated to screen *for B. cereus* prior to pasteurization.



Figure 3. Visible *B. cereus* colonies create pink color change.

ELISA drug detection



Y Antibody Target analyte Przyme labeled antigen A Enzyme reaction Figure 4. Competitive ELISA schematic. ELISA tests screen processed donor human milk for six common drugs of abuse: amphetamines, cocaine, opiates, benzodiazepines, THC, and PCP. ELISA screening provides verification that the donor screening process has successfully excluded unapproved medications and drugs.



Figure 5. Samples are plated for ELISA drug screening from each batch of donor milk.

Conclusion

B. cereus prescreening and ELISA drug screening control for biological and chemical hazards in donor human milk.