

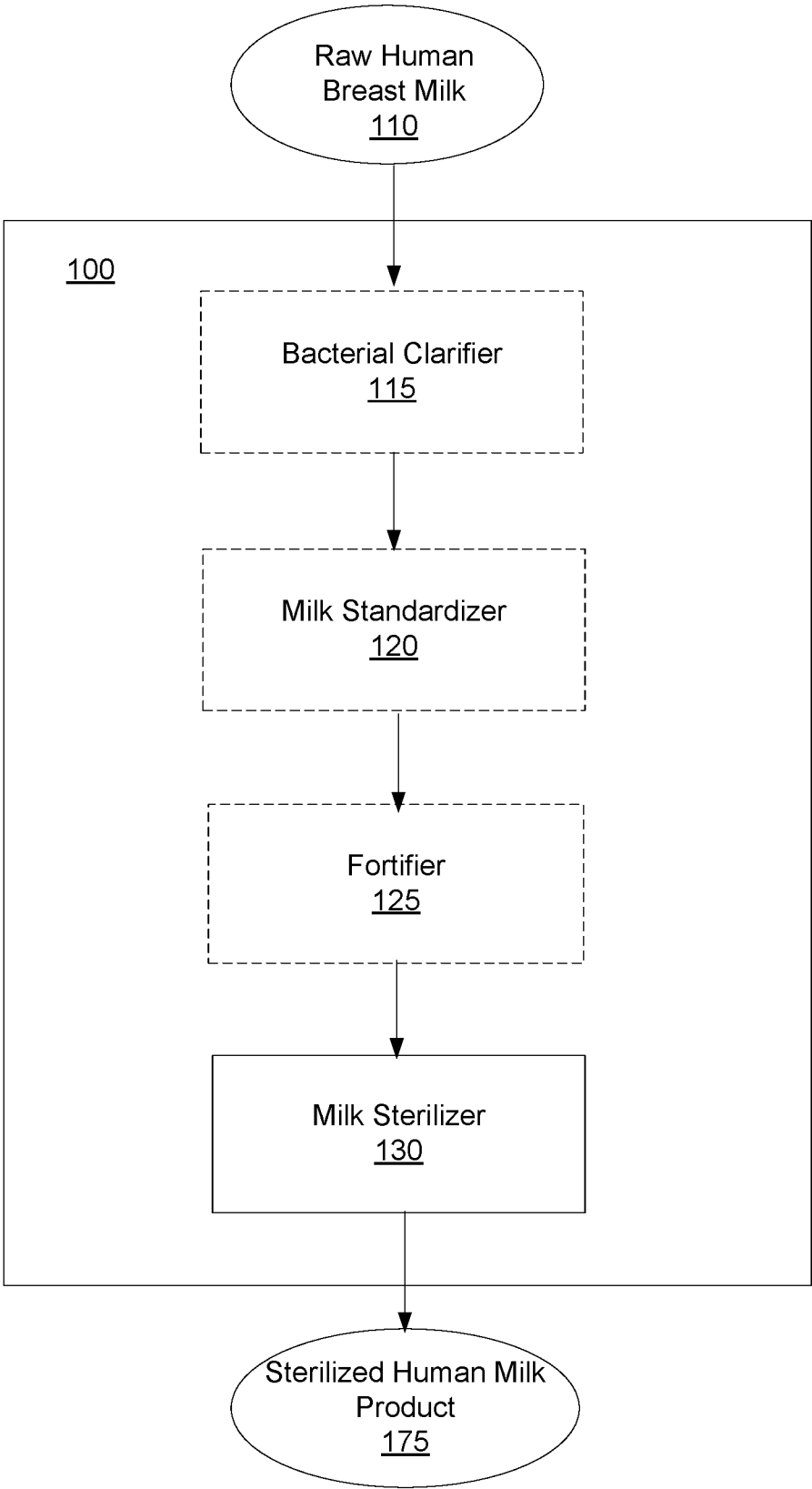
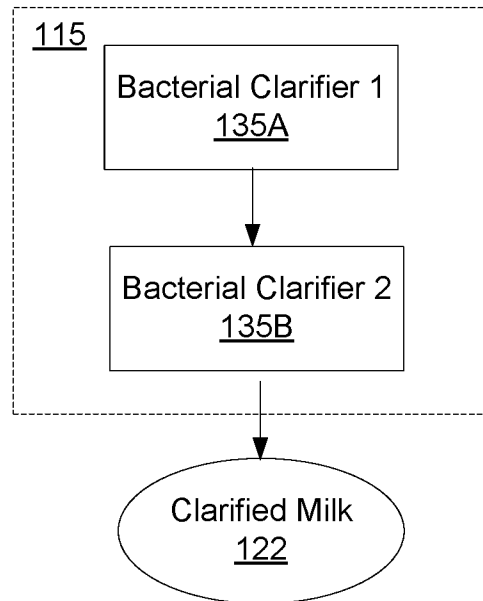
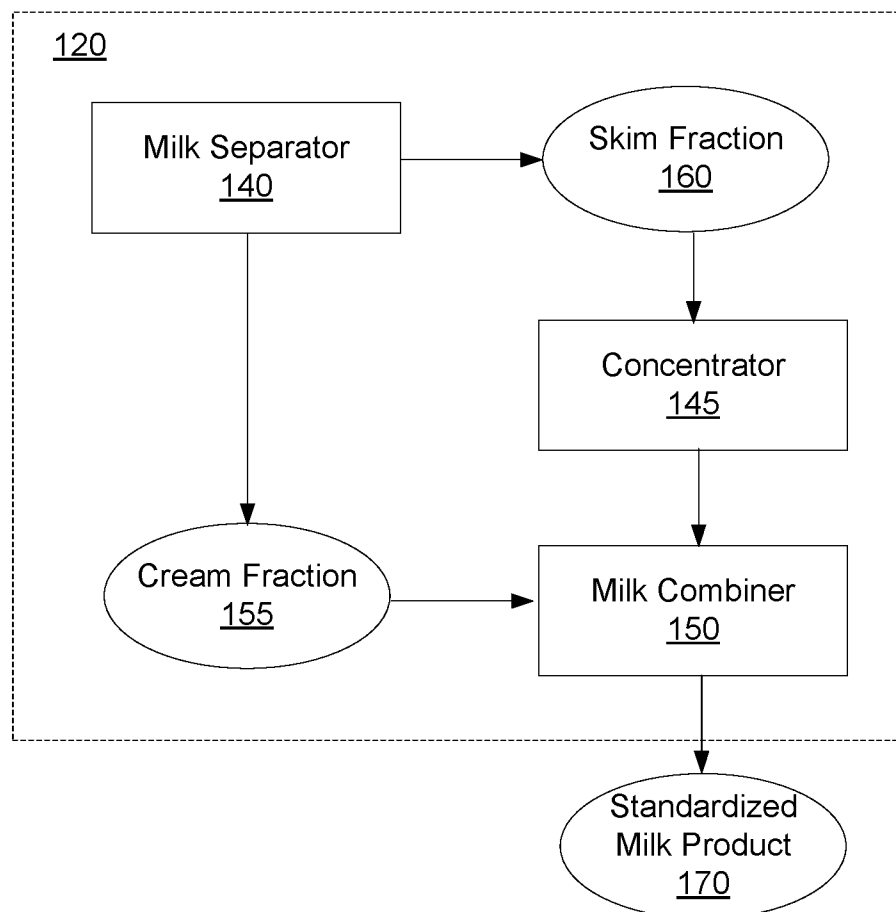


FIG. 1A

**FIG. 1B****FIG. 1C**

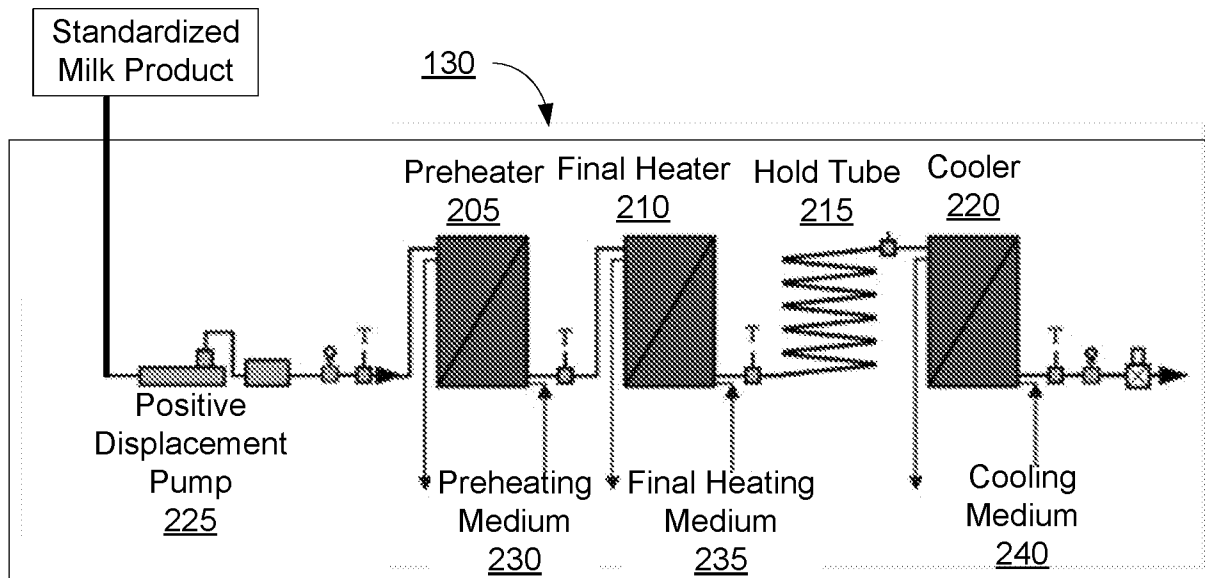


FIG. 2

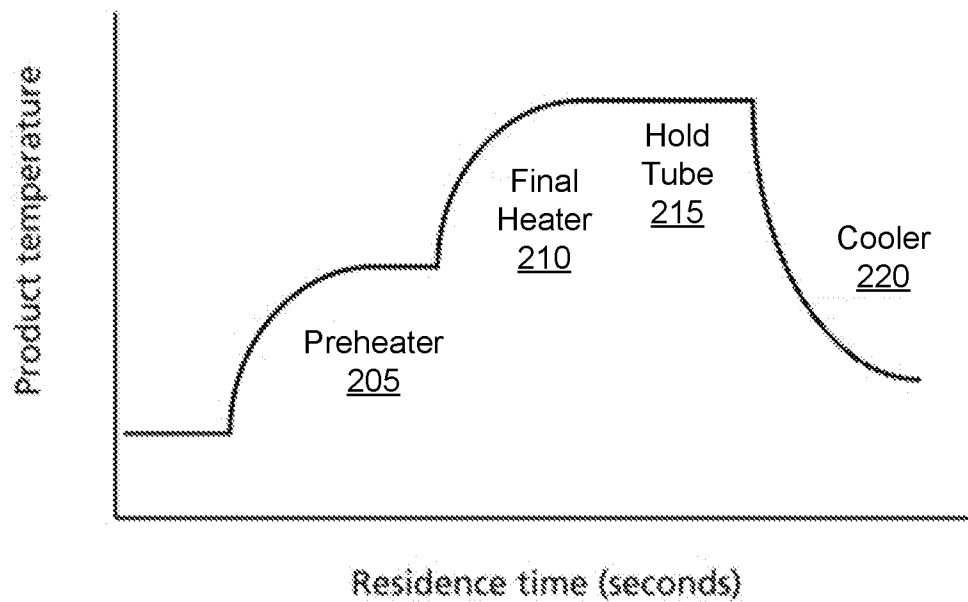


FIG. 3

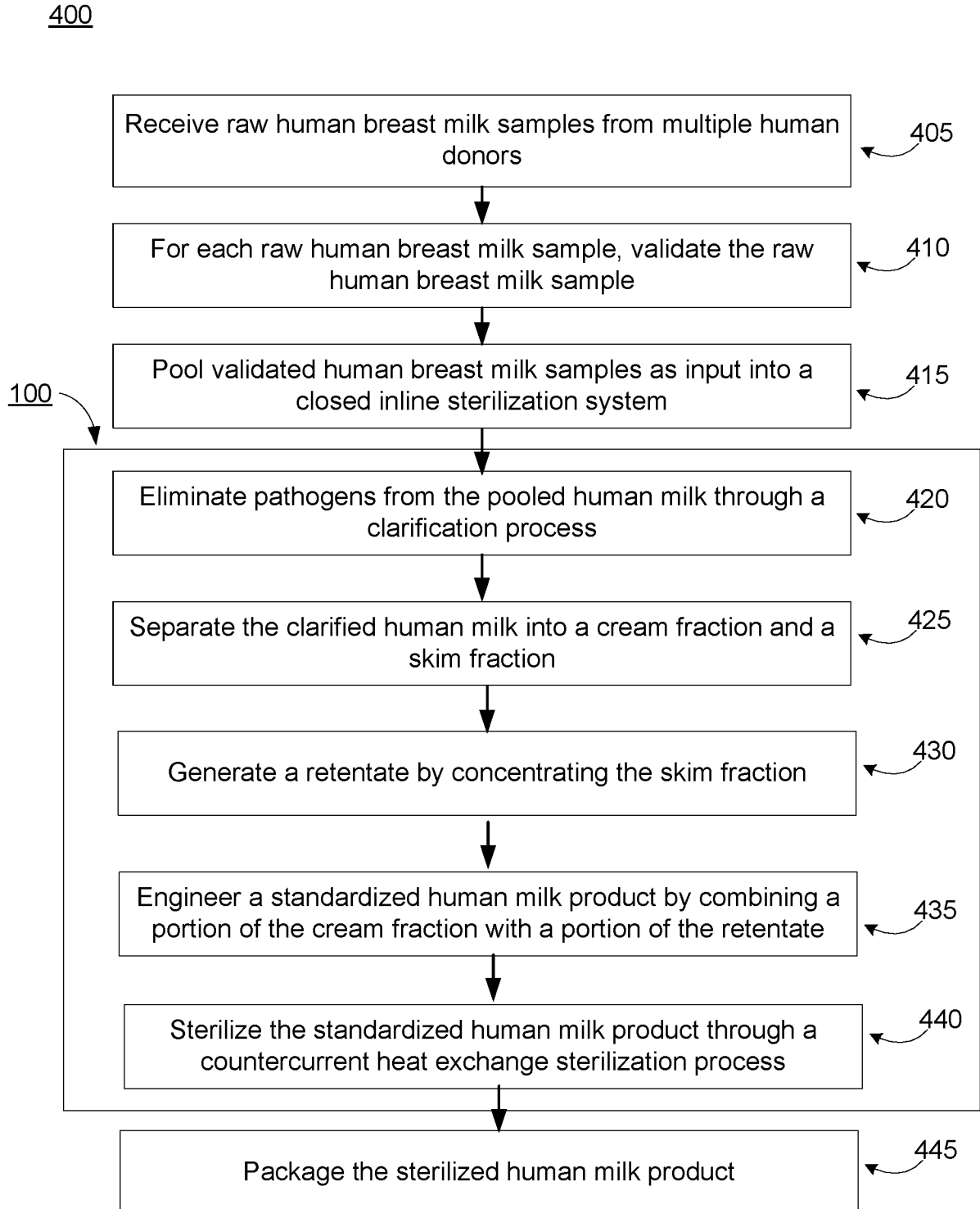
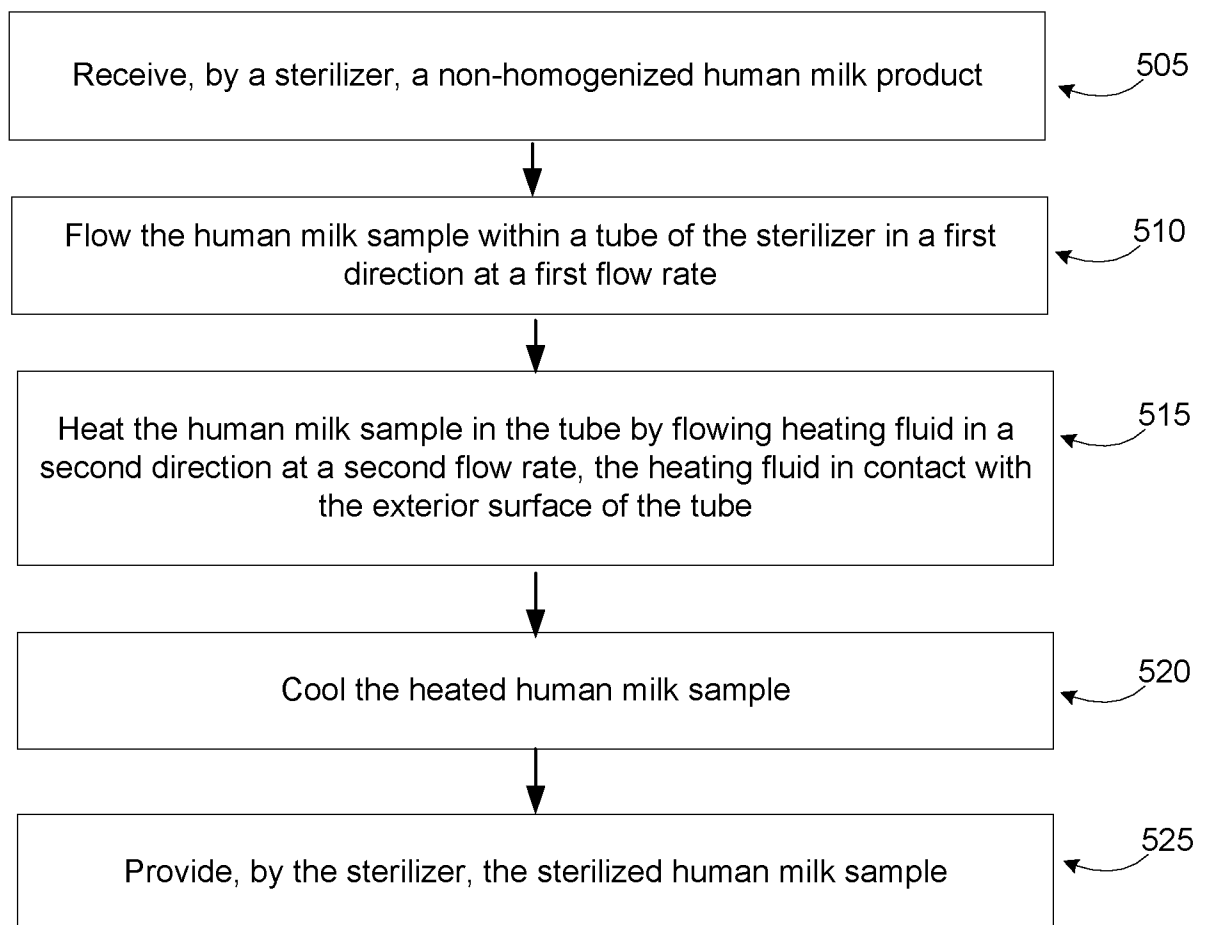


FIG. 4

440**FIG. 5**

Run	Hold Time (FERT, sec):	Temperature (°F/°C)	C. Botulinum Log Reduction	B. Cereus Log Reduction
1	12.6	276.5 / 135.8	15.9	>1000
2	12.6	279.0 / 137.2	20.6	>1000
3	12.6	281.5 / 138.6	30.2	>1000
4	12.6	284.5 / 140.3	41.6	>1000
5	9.6	280.5 / 138.1	20.2	>1000
6	9.6	283.5 / 139.7	26.1	>1000
7	9.6	286.0 / 141.1	38.4	>1000
8	8.1	283.0 / 139.4	22.1	>1000
9	8.1	286.0 / 141.1	32.4	>1000
10	8.1	288.5 / 142.5	41.8	>1000
11	8.1	291.3 / 144.1	45.0	>1000
12	6.6	286.5 / 141.4	30.0	>1000
13	6.6	289.0 / 142.8	38.7	>1000
14	6.6	291.5 / 144.2	50.0	>1000

FIG. 6A

Analytical Data per 100g of sample	Raw Human Milk Sample	Run 11 Sterilized Human Milk Product
Calories	65.1	63.9
Calories from fat	32.7	31.1
Total fat	3.63 g	3.46 g
Saturated Fat	1.54 g	1.46 g
Trans Fat	<0.10 g	<0.10 g
Cholesterol	13.5 mg	12.8 mg
Sodium	15.4 mg	10.8 mg
Total Carbohydrate	6.7 g	6.8 g
Sugars	5.72 g	5.51 g
Protein (F=6.38)	1.40 g	1.40g
Vitamin A	189 IU	169 IU
Calcium	31.3 mg	29.5 mg
Iron	<0.1 mg	<0.1 mg

FIG. 6B

Concentration or abundance	Raw Milk Sample 1	Run 4	Run 4 Retention %	Run 11	Run 11 Retention %
IgA (g/L)	0.214	0.191	89%	0.188	88%
IgM (g/L)	0.057	0.045	78%	0.044	77%
IgG (g/L)	0.034	0.038	112%	0.036	107%
Anti-Trypsin (g/L)	0.124	0.084	68%	0.079	64%
Lactoferrin (g/L)	2.11	1.89	89%	1.70	81%
Lysozyme (g/L)	0.052	0.043	83%	0.041	78%
Lactalbumin (g/L)	2.81	2.30	82%	2.03	72%
alpha Casein (1 x 10 ⁴ ion counts)	1.65	1.63	99%	1.52	92%
Beta Casein (1 x 10 ⁵ ion counts)	5.43	5.10	94%	4.98	92%
Kappa Casein (1 x 10 ⁵ ion counts)	2.14	2.00	93%	1.96	92%
Osteopontin (1 x 10 ⁴ ion counts)	3.02	3.13	104%	2.63	87%
Total human milk oligosaccharides (HMO) (g/L)	12.09	11.12	92%	11.27	93%

FIG. 6C

Concentration or abundance	Raw Milk Sample 2	Run 7	Run 7 Retention %	Run 14	Run 14 Retention %
IgA (g/L)	0.245	0.253	104%	0.246	100%
IgM (g/L)	0.020	0.020	97%	0.021	106%
IgG (g/L)	0.043	0.046	105%	0.050	115%
Anti-Trypsin (g/L)	0.054	0.057	106%	0.060	111%
Lactoferrin (g/L)	1.78	1.48	83%	1.48	83%
Lysozyme (g/L)	0.115	0.105	91%	0.098	85%
Lactalbumin (g/L)	2.49	2.31	93%	2.53	101%
alpha Casein (1 x 10 ⁴ ion counts)	1.58	1.29	81%	1.31	83%
Beta Casein (1 x 10 ⁵ ion counts)	5.36	5.00	93%	5.14	96%
Kappa Casein (1 x 10 ⁵ ion counts)	0.15	0.14	97%	0.15	98%
Osteopontin (1 x 10 ⁴ ion counts)	0.37	0.47	126%	0.51	139%
Total human milk oligosaccharides (HMO) (g/L)	8.80	9.10	103%	8.82	100%
Fucosylated milk oligosaccharides (g/L)	5.52	5.60	101%	5.46	99%
2'-Fucosyllactose (g/L)	0.71	0.72	101%	0.75	105%
3'-Fucosyllactose (g/L)	0.96	0.93	97%	0.92	96%
Sialylated milk oligosaccharides (g/L)	1.10	1.11	101%	1.08	98%
Non-fucosylated milk oligosaccharides (g/L)	2.40	2.56	107%	2.46	103%

FIG. 6D

	Raw Human Milk	Sterilized Human Milk Product (Run 4)
Aerobic Plate Count (CFU/g)	>250000	<10
Yeast (CFU/g)	<10	<10
Mold (CFU/g)	10	<10

FIG. 6E

	Amino acids (g/L)	Bovine Colostrum (g/L)	Vitamin Plain (g/L)	Vitamin C (g/L)	Vitamin D (g/L)	Magnesium Bisglycinate (g/L)	Magnesium Glycinate (g/L)	Calcium Lactate (g/L)	L-Theanine (g/L)	Stevia (g/L)
Fortified Milk Sample 1	34.0									
Fortified Milk Sample 2		30.0								
Fortified Milk Sample 3			5.4							
Fortified Milk Sample 4	34.0	15.0								
Fortified Milk Sample 5	34.0	15.0	5.4	2.2	4.0					
Fortified Milk Sample 6		30.0				16.0		17.0	0.4	
Fortified Milk Sample 7		30.0					16.0	17.0	0.4	0.4

FIG. 7A

	Amino Acids (g/L)	Bovine Colostrum (g/L)	Vitamin Plain (g/L)	Vitamin C (g/L)	Vitamin D (g/L)	Lacto Enzymedica (g/L)	Vitamin Cherry (g/L)	Flavored Amino Acids (g/L)	Methyl sulfonylmethane (g/L)
Fortified Milk Sample 8						2.8			
Fortified Milk Sample 9	38.0	15.0	5.4						
Fortified Milk Sample 10	30.0	18.0	5.4						
Fortified Milk Sample 11	34.0	15.0		2.2	4.0		4.8		
Fortified Milk Sample 12		15.0	7.6	2.2	4.0			46.5	
Fortified Milk Sample 13	15.0	50.7		3.1	4.0		9.6	70.5	5.0

FIG. 7B

Run	Hold Time (FERT, sec):	Temperature (°F/°C)	B. Cereus Log Reduction
Fortified Milk Sample 1	8.1	286.0 / 141.1	>1000
Fortified Milk Sample 2	8.1	286.0 / 141.1	>1000
Fortified Milk Sample 3	8.1	286.0 / 141.1	>1000
Fortified Milk Sample 4	8.1	286.0 / 141.1	>1000
Fortified Milk Sample 5	8.1	286.0 / 141.1	>1000
Fortified Milk Sample 6	8.1	286.0 / 141.1	>1000
Fortified Milk Sample 7	8.1	286.0 / 141.1	>1000
Fortified Milk Sample 8	8.1	286.0 / 141.1	>1000
Fortified Milk Sample 9	8.1	286.0 / 141.1	>1000
Fortified Milk Sample 10	8.1	286.0 / 141.1	>1000
Fortified Milk Sample 11	8.1	286.0 / 141.1	>1000
Fortified Milk Sample 12	8.1	286.0 / 141.1	>1000
Fortified Milk Sample 13	8.1	286.0 / 141.1	>1000

FIG. 7C

Analytical Data per 100g of sample	Commercial-Scale Sterilized Human Milk Product	Method Reference
Calories	65.3 g	Calculation
Total Fat	3.64 g	AOAC 996.06
Monounsaturated Fat	1.30 g	
Polyunsaturated Fat	0.72 g	
Saturated Fat	1.40 g	
Trans Fat	<0.10 g	
Cholesterol	11.9 mg	AOAC 994.10
Sodium	11.6 g	AOAC 984.27
Potassium	48.4 mg	AOAC 984.27
Total Carbohydrate	6.8 g	Calculation
Sugars	5.85 g	Internal HPLC
Fructose	<0.10 g	
Glucose	<0.10 g	
Lactose	5.85 g	
Maltose	<0.10 g	
Sucrose	<0.10 g	
Galactose	<0.10 g	
Protein (F=6.38)	1.34 g	AOAC 992.23
Protein Digestibility Corrected Amino Acid Score (PDCAAS)	72.4 (w/w%)	FAO Paper 51 (1991)
Calcium	28.4 mg	AOAC 984.27
Iron	<0.1 mg	AOAC 984.27
Moisture	88.00 g	AOAC 926.08
Ash	0.18 g	AOAC 935.39
Vitamin D2	<0.75 mcg	AOAC 2011.11 Mod.
Vitamin D3	1 mcg	AOAC 2011.11 Mod.

FIG. 8A

	Bacillus Cereus - Presumptive (CFU/g)	Aerobic Plate Count (CFU/g)	Total Microbial Count (CFU/g)	Yeast (CFU/g)	Mold (CFU/g)
Commercial-Scale Sterilized Human Milk Product					
Bottle 158	< 100	< 10	< 10	< 10	< 10
Bottle 1888	< 100	< 10	< 10	< 10	< 10
Bottle 3151	< 100	< 10	< 10	< 10	< 10
Raw Human Milk	300	780,000		4,200	< 10

FIG. 8B

Analytical Data per 100g of sample	Commercial-Scale, Sterilized and Fortified Human Milk Product	Method Reference
Calories	96.0 g	Calculation
Total Fat	4.03 g	AOAC 996.06
Monounsaturated Fat	1.39 g	
Polyunsaturated Fat	0.66 g	
Saturated Fat	1.71 g	
Trans Fat	<0.10 g	
Cholesterol	19.2 mg	AOAC 994.10
Sodium	22.4 mg	AOAC 984.27
Potassium	112 mg	AOAC 984.27
Total Carbohydrate	7.4 g	Calculation
Sugars	5.48 g	Internal HPLC
Fructose	<0.10 g	
Glucose	<0.10 g	
Lactose	5.48 g	
Maltose	<0.10 g	
Sucrose	<0.10 g	
Galactose	<0.10 g	
Protein (F=6.38)	7.53 g	AOAC 992.23
Protein Digestibility Corrected Amino Acid Score (PDCAAS)	100.0 (w/w ⁹)	FAO Paper 51 (1991)
Calcium	109 mg	AOAC 984.27
Iron	<0.1 mg	AOAC 984.27
Moisture	80.40 g	AOAC 926.08
Ash	0.59 g	AOAC 935.39
Vitamin D2	<0.75 mcg	AOAC 2011.11 Mod.
Vitamin D3	36 mcg	AOAC 2011.11 Mod.

FIG. 9A

	Bacillus Cereus - Presumptive (CFU/g)	Yeast (CFU/g)	Mold (CFU/g)
Commercial-Scale Sterilized Fortified Human Milk Product	< 100	< 10	< 10
Raw Fortified Human Milk	< 100	10000	< 10

FIG. 9B