FEB 10 1950

HEAT STABILITY OF POLIO "ANTIBODY" OF HUMAN MILK AND SERUM

PURPOSE - To determine the effect of 60°c for 30 minutes on polio "antibody" of human milk and serum.

PROCEDURES - One cc amounts of the milks and sera to be tested were placed in a glass ampules which were then sealed and submerged in a 60°c water bath for 1/2 hour. The heated samples were tested undiluted, 1:4, 1:16, 1:64, [redacted] against equal amounts of Lansing virus 1:50 making a final virus concentration of 10^{-2}.
The mixtures were incubated for 1 hr at room temps & were then used for inoculation into mice.
(There was no flocculate or ppt. in the heated milks & sera)

VIRUS USED - Lansing - Pool III of 8-16-49

MICE - 18-20 gm Mayfield female albino
8 mice per dilution.

Human Heat stability

VIRUS - 1:100

	UNDIL	1:4	1:16	1:64
A - [redacted] SERUM (HEATED)	3/8	1/8	5/8	8/8
B - " - MILK "	0/8	5/8	5/8	5/8
C - [redacted] SERUM "	2/8	1/8	3/8	5/8
D - " - MILK "	1/8	3/8	5/8	8/8
E - VIRUS CONTROL	16/16			

HEAT STABILITY OF POLIO "ANTIBODY" OF HUMAN MILK AND SERUM

FEB 10 1950

SPECIMEN	SERUM	NO	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35	MORTALITY	LD50
A [redacted] SERUM (HEATED) + LANSING 10^{-2}	UNOIL	1	- - - - - D		
		2	- - - - - - - - - - - - - - - - - - - ? D		
		3	- - - - - - - - - - - - - - - - - - - E? E ? - - - - - - - D		
		4	- -	2/8	
		5	- -		
		6	- -		
		7	- -		
		8	- -		
	1:4	1	- - - - - - - - - - - - - - - - - - - D		
		2	- ? - -		
		3	- -	1/8	
		4	- -		
		5	- -		
		6	- -		
		7	- -		
		8	- -		
2 DAYS AFTER DELIVERY	1:16	1	- - - - - - - - - - - - - - - - - - P D		
		2	- - - - - - - - - - - - - - - - - - P P P D		
		3	- D	5/8	
		4	- D		
		5	- P D		
		6	- -		
		7	- -		
		8	- -		
	1:64	1	- - D		
		2	- - - - - - - P P F D		
		3	- - - - - - - - P E E P P D	8/8	
		4	- - - - - - - - - - - P D		
		5	- - - - - - - - - - - - - - - - - D		
		6	- - - - - - - - - - - - - - - - - W D		
		7	- - - - - - - - - - - - - - - - - P D		
		8	- - - - - - - - - - - - - - - - - - - PP D		

HEAT STABILITY OF POLIO "ANTIBODY" OF HUMAN MILK AND SERUM

FEB 10 1950

SPECIMEN

B

[redacted]

MILK (HEATED)
+
LANSING 10^{-2}

2 DAYS AFTER DELIVERY

MILK	NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	MORTALITY	LD50
UNDIL	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0/8	
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1:4	1	-	-	-	-	D																															5/8	
	2	-	-	-	-	-	-	-	-	-	-	-	-	?	P	PP	D																					
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	?		D																					
	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	?	? CNS	D																
	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	?	?	CNS	D												
	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
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1:16	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	PP	PP	D																5/8	
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		P	PP	D																	
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	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	D												
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1:64	1	-	-	-	-	-	-	-	-	P	D																										5/8	
	2	-	-	-	-	-	-	-	-	-	P	D																										
	3	-	-	-	-	-	-	-	-	P	PP	D																										
	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	P	D																
	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	?	-	-	-	?	P	D												
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HEAT STABILITY OF POLIO "ANTIBODY" OF HUMAN MILK AND SERUM

FEB 10 1950

SPECIMEN	SERUM	NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	MORTALITY	LD50
C [redacted] SERUM (HEATED) + LANSING 10^{-2}	UNDIL	1	-	-	-	-	-	-	-	-	-	-	-	-	D																							2/8	
		2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	PP	D														
		3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
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	1:4	1	-	-	-	-	-	-	-	D																												1/8	
		2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
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3 DAYS AFTER DELIVERY	1:16	1	-	-	-	-	-	-	-	-	P	D																										3/8	
		2	-	-	-	-	-	-	-	-	-	-	-	-	-	PP	D																						
		3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	D																			
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	1:64	1	-	-	-	-	-	-	-	-	P	D																										5/8	
		2	-	-	-	-	-	-	-	-	P	D																											
		3	-	-	-	-	-	-	-	-	-	P	PPP PP	D																									
		4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PP	D															
		6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	D									
		6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
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		8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

HEAT STABILITY OF POLIO "ANTIBODY" OF HUMAN MILK AND SERUM

FEB 10 1950

SPECIMEN

D

[redacted]

MILK (HEATED) + LANSING 10-2

3 DAYS AFTER DELIVERY

MILK	NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	MORTALITY	LD50
UNDIL	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	?	D																				1/8	
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–																							
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–																							
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–																							
	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–																							
	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–																							
	7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–																							
	8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–																							
1:4	1	–	–	P	D																																3/8	
	2	–	–	–	D																																	
	3	–	–	–	–	–	–	?	–	–	?	?	–	?	–	–	P	D																				
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	?	–	–	–	–	–	–	–	–	–	–	–	–	–	–	?	–	–				
	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
	7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
	8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
1:16	1	–	–	–	–	–	–	PP	D																												5/8	
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	D																							
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	P	PP	D																			
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	?	D																		
	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	?	PP	D																	
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	7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
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1:64	1	–	–	–	–	–	–	–	–	P	D																										5/8	
	2	–	–	–	–	–	–	–	–	P	PP	D																										
	3	–	–	–	–	–	–	–	–	P	PP	D																										
	4	–	–	–	–	–	–	–	–	P	PP	PP	D																										
	5	–	–	–	–	–	–	–	–	CNS	P CNS	P	D																										
	6	–	–	–	–	–	–	–	–	–	–	P	D																										
	7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	P	PP	D																
	8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	?	PP PP	D															

HEAT STABILITY OF POLIO "ANTIBODY" OF HUMAN MILK AND SERUM

FEB 10 1950

SPECIMEN	VIRUS	No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	MORTALITY	LD50
E	10^{-2}	1	-	-	PP	D																																	
		2	-	-	-	-	-	-	-	P	D																												
		3	-	-	-	-	-	-	-	W	D																												
		4	-	-	-	-	-	-	-	-	PP	D																											
		5	-	-	-	-	-	-	-	-	P	D																											
		6	-	-	-	-	-	-	-	-	-	P	D																										
		7	-	-	-	-	-	-	-	-	-	-	-	?	D																								
		8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	?	?	?	P	PP	PP	D								
CONTROL		1	-	-	-	-	-	-	P	D																													
		2	-	-	-	-	-	-	-	P	D																												
		3	-	-	-	-	-	-	CNS	CNS	D																												
	10^{-2}	4	-	-	-	-	-	-	-	-	-	P	D																										
		5	-	-	-	-	-	-	-	-	-	-	?	D																										
		6	-	-	-	-	-	-	-	-	-	-	-	P CNS	D																								
		7	-	-	-	-	-	-	-	-	-	-	-	-	?	P CNS	D																						
		8	-	-	-	-	-	-	-	-	-	-	-	-	?	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CNS	D		

APR 10 1950

HEAT STABILITY OF POLIO "ANTIBODY" OF HUMAN MILK

PURPOSE - To determine the effect of 60° C for 30 minutes on polio "antibody" of human milk.

PROCEDURES - The milks to be tested following heating were distributed in glass ampules which were then sealed + placed in a 60° C H_2O bath for 1/2 hr. The various milk samples were distributed and diluted making final concentrations, after virus, of 1:2 ; 1:8 ; 1:32 ; 1:128 ; 1:512. 1/50 virus was added to equal volumes of milk making a final virus concentration of 10^{-2} in all the tubes. Following incubation of the milk-virus mixture at room temperature for 1 hour, mice were inoculated.

VIRUS USED - Lansing - Polio II of 8-16-49

MICE - 18-20 gram Maxfield albino (female)
8 mice per dilution

VIRUS 10^{-2}

FINAL MILK DILUTIONS:

	1:2	1:8	1:32	1:128	1:512
A - [redacted] (UNHEATED)					
B - [redacted] (HEATED)					
C - [redacted] (UNHEATED)					
D - [redacted] (HEATED)					
E - [redacted] (UNHEATED)					[redacted]
F - [redacted] (HEATED)					[redacted]
G - VIRUS CONTROL	[redacted]				

APR 10 1950

HEAT STABILITY OF POLIO "ANTIBODY" OF HUMAN MILK

SPECIMEN	MILK	NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	MORTALITY	LD 50
		1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
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[redacted]		4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0/8	
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MILK		6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
UNHEATED		7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
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VIRUS 10^{-2}		3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
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AFTER	1:32	5	-	-	-	-	-	-	-	-	-	-	-	-	P	PP	D																						
DELIVERY		6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EPE - USED 4/28																			
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		2	-	-	PP	D																																	
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	1:128	5	-	-	-	-	-	-	-	-	-	-	-	D																									
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HEAT STABILITY OF POLIO "ANTIBODY" OF HUMAN MILK

APR 10 1950

SPECIMEN	MILK	NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	MORTALITY	LD 50
A (CON'T)		1	-	P	D																																		
		2	-	P	D																																		
		3	-	-	D																																		
		4	-	-	?	?	-	-	-			? CNS	PP	D																									
	1:512	5	-	-	-	-	-	-	-	-	-	-	P	USED 4/20																								8/8	
		6	-	-	-	-	-	-	-	-	-	E (CN)	D																										
		7	-	-	-	-	-	-	-	-	-	-	?	D																									
		8	-	-	-	-	-	-	-	=	-	-	-	-	-	-	-	-	-	-	-	?	D																
B [redacted] MILK HEATED + LANSING VIRUS 10^{-2}		1	-	?	D					-																												
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3 DAYS AFTER DELIVERY		1	-	-	-	-	-	P	D																													
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APR 10 1950

HEAT STABILITY OF POLIO "ANTIBODY" OF HUMAN MILK

SPECIMEN	MILK	NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	MORTALITY	LD 50
B (CON'T)		1	-	-	-	-	-	!	-	PP PP	D																											8/8	
		2	-	-	-	-	-	-	-	-	P	D																											
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		4	-	-	-	-	-	-	-	-	-	-	D																										
	1:128	5	-	-	-	-	-	-	-	-	-	-	P	PP PP	D																								
		6	-	-	-	-	-	-	-	-	-	-	-	-	D																								
		7	-	-	-	-	-	-	-	-	-	-	-	-	-	?	D																						
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		2	-	-	-	-	-	PP	PP P	D																													
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MILK	1:2	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
UNHEATED		6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
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LANSING		1	-	-	-	-	PP	D																														1/8	
VIRUS 10^{-2}		2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
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HEAT STABILITY OF POLIO "ANTIBODY" OF HUMAN MILK

APR 10 1950

SPECIMEN	MILK	NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	MORTALITY	LD 50
C [redacted] MILK UNHEATED (CON'T) +	1:32	1	-	?	PP	PP	D																															4/8	
		2	-	-	P	PP	D																																
		3	-	-	-	PP	PP	D																															
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		5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
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LANSING VIRUS 10^{-2}		1	-	P	D																																	6/8	
		2	-	?	PP	D																																	
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5 DAYS AFTER DELIVERY		1	-	-	D																																	8/8	
		2	-	-	-	-	-	?	P	PP	D																												
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D [redacted] MILK HEATED		1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0/8	
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HEAT STABILITY OF POLIO "ANTIBODY" OF HUMAN MILK

APR 10 1950

SPECIMEN	MILK	NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	MORTALITY	LD50
D [redacted] MILK HEATED (CONT.) + LANSING 10^{-2}	1:8	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6/8	
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	1:32	1	-	-	-	PP	D																															6/8	
		2	-	-	-	P	PP PP	D																																
		3	-	-	-	-	P	PP PP	PP PP	D																														
		4	-	-	-	-	-	-	-	-	-	-	-	-	P	D																							
		5	-	-	-	-	-	-	-	-	-	-	-	-	-	?	PP PP	PP PP	D																				
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5 DAYS AFTER DELIVERY	1:128	1	-	W	D																																	6/8	
		2	-	-	PP	D																																	
		3	-	-	P	D																																	
		4	-	-	?	D																																	
		5	-	-	-	-	-	-	-	-	P	- USED 4/20																											
		6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P E	D																		
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	1:512	1	-	P	D																																	8/8	
		2	-	-	-	-	D																																
		3	-	-	-	-	-	E	E	-	-	P	- USED 4/20																										
		4	-	-	-	-	-	-	-	-	-	-	-	E P P P P	D																								
		5	-	-	-	-	-	-	-	-	-	-	-	-	P	PP P	D																						
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APR 10 1950

HEAT STABILITY OF POLIO "ANTIBODY" OF HUMAN MILK

SPECIMEN	MILK	NO	Days 1–35	MORTALITY	LD50
E	1:2	1	– CNS ? ? (inoculation injury) D (day 5)	3/8	
[redacted]		2	– days 1–8, P day 9, D day 10		
MILK UNHEATED + LANSING 10^{-2}		3	– days 1–20, PPP/P days 21–22, D day 23		
		4	– days 1–35		
		5	– days 1–35		
		6	– days 1–35		
		7	– days 1–35		
		8	– days 1–35		
	1:8	1	– days 1–3, D day 4	3/8	
		2	– days 1–5, P day 6, D day 7		
		3	– days 1–28, P day 29, D day 30		
		4	– days 1–35		
		5	– days 1–35		
		6	– days 1–35		
		7	– days 1–35		
		8	– days 1–35		
192 DAYS AFTER DELIVERY	1:32	1	– days 1–4, PP PP days 5–6, D day 7	4/8	
		2	– days 1–10, D day 11		
		3	– days 1–14, PP/PP day 15, D day 16		
		4	– days 1–15, P day 16, D day 17		
		5	– days 1–35		
		6	– days 1–35		
		7	– days 1–35		
		8	– days 1–35		
	1:128	1	– days 1–4, NP PP PP days 5–7, D day 8	8/8	
		2	– days 1–4, PP PP PPP/PP PP/PP days 5–9, D day 10		
		3	– days 1–7, PP PP PP/PP days 8–10 · USED 4/20		
		4	– days 1–9, P day 10, D day 11		
		5	– days 1–9, P day 10, PP day 11, D day 12		
		6	– days 1–11, PP day 12, D day 13		
		7	– days 1–12, ? day 13, D day 14		
		8	– days 1–28, PP day 29, D day 30		

STANDARD B & P "NOTEAR"

HEAT STABILITY OF POLIO "ANTIBODY" OF HUMAN MILK

APR 10 1950

SPECIMEN	MILK	NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	MORTALITY	LD50
F [redacted] MILK HEATED + LANSING 10^{-2}	1:2	1	D																																			1/7	
		2	-	-	-	?	?	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	D																
		3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
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198 DAYS AFTER DELIVERY	1:32	1	D																																			5/7	
		2	-	-	-	-	P	P	PP	D																													
		3	-	-	-	-	-	P	PP	PP	PP	PP	PP	-USED 4/20																									
		4	-	-	-	-	-	-	-	-	-	-	-	-	-	P	PP	PP	D																				
		5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	D																			
		6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PP	PP	PP	D																
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	1:128	1	-	-	P	D																																8/8	
		2	-	-	-	P	P	PP	PP	D																													
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		4	-	-	-	-	-	-	-	-	P	D																											
		5	-	-	-	-	-	-	-	-	-	-	P	USED 4/20																									
		6	-	-	-	-	-	-	-	-	-	-	-	P	D																								
		7	-	-	-	-	-	-	-	-	-	-	-	-	P	D																							
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HEAT STABILITY OF POLIO "ANTIBODY" OF HUMAN MILK

APR 10 1950

SPECIMEN	VIRUS	NO	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35	MORTALITY
G		1	D	
		2	- D	
		3	- D	
	10^{-2}	4	- D	
		5	- PP PP D	
VIRUS		6	- - - - - - - P PPP P - USED 4/20	
10^{-2}		7	- - - - - - - - - E EE EE CNS CNS D	
ONLY		8	- - - - - - - - - - - - - - - - - - P E P P D	
CONTROL		1	- P D	
		2	- - PP PP PP D	
		3	- - - - - P D	
	10^{-2}	4	- - - - - ? CNS PP PP D	
		5	- - - - - - P PP PP D	
		6	- - - - - - - - PPP P - USED 4/20	
		7	- - - - - - - - - ?EEP D	
		8	- - - - - - - - - - ? PP EE D	

HEAT STABILITY OF POLIO "ANTIBODY" OF HUMAN MILK AND SERUM

APR 13 1950

PURPOSE - To determine the effect of 60°C for 30 min. on polio "antibody" of human milk and serum

PROCEDURES - The milks + sera to be tested following heating were distributed in glass ampules which were then sealed and submerged in a 60°C H_2O bath for ½ hr. The various milk and serum samples were distributed and diluted making final concentrations after virus of 1:2; 1:8; 1:32; 1:128; 1:512. 1/50 virus was added to equal volumes of milk and serum making a final virus concentration of 10^{-2} in all tubes. Following incubation of the milk-virus, and serum-virus mixtures at room temperature for 1 hour, mice were inoculated.

VIRUS USED - Lansing - Pool IV of 8-16-49

MICE - 18-20 gram Rockefeld albino (female) 8 mice per dilution

VIRUS 10^{-2}

FINAL MILK OR SERUM DILUTION

	1:2	1:8	1:32	1:128	1:512
A. [redacted] MILK (UNHEATED)					—
B. [redacted] MILK (HEATED)					—
C. [redacted] SERUM (UNHEATED)					—
D. [redacted] SERUM (HEATED)					—
E. [redacted] SERUM (UNHEATED)					
F. [redacted] SERUM (HEATED)					
G. VIRUS ONLY-(CONTROL)					

STANDARD B & P "NOTEAR"

APR 13 1950

SPECIMEN	MILK	No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	MORTALITY	LD50
A [redacted] MILK UNHEATED + LANSING 10^{-2}	1:2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	D	EATEN									0/6	
		2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	D											
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2 DAYS AFTER DELIVERY	1:32	1	-	-	-	P	D																															7/8	
		2	-	-	-	-	-	-	-	P	D																												
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		8	-	-	-	-	-	-	-	-	-	-	-	-	?	D																						

APR 13 1950

SPECIMEN	MILK	No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	MORTALITY	LD50
B [redacted] MILK HEATED + LANSING 10^{-2}	1:2	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	PP	D										1/8	
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2 DAYS AFTER DELIVERY	1:32	1	D	–																																		6/7	
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	1:128	1	D																																		8/8	
		2	–	PP	D																																	
		3	–	P	D																																	
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STANDARD B & P "NOTEAR"

APR 13 1950

SPECIMEN	SERUM	NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	MORTALITY	LD50
C [redacted] SERUM UN HEATED + LANSING 10^{-2}	1:2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	D															1/8	
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APR 13 1950

SPECIMEN

D

[redacted]

SERUM HEATED + LANSING 10^{-2}

5 DAYS AFTER DELIVERY

SERUM	NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	MORTALITY	LD_{5-0}
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STANDARD B & P "NOTEAR"

APR 13 1950

SPECIMEN	SERUM	NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	MORTALITY	LD50
E [redacted] SERUM UNHEATED + LANSING 10^{-2}	1:2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0/8	
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192 DAYS AFTER DELIVERY	1:32	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	D						1/8	
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APR 13 1950

SPECIMEN	SERUM	NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	MORTALITY	LD50
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STANDARD B & P "NOTEAR"

APR 13 1950

SPECIMEN	SERUM	NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	MORTALITY	LD50
F (CONT.) [redacted] SERUM HEATED + LANSING 10^{-2}	1:128	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PP	D																			6/8	
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For Effect of 100°C on Human Milk Pool "A"
(Early Milks) + fat free – see test of 5/25/50
under "Human Qualitative)

MAY 29 1950

TESTS = HUMAN MILK POOL B vs LANSING

The milks in this Pool were obtained from 3 mothers 190 - 340 days after delivery (Hooch, Hample, Davenport).

Effect of 100° C on Human milk Pool B:

No gross physical change in the milk was observed following 100° C x ½ hour. The milk was heated by placing 1.5cc in a glass ampule which was sealed & submerged in boiling water.

Effect of Centrifugation at 2000RPM x 20 MIN on Pool B:

4cc placed in small Centrifuge tube (10 Cm. long - 7 mm inside diameter) yielded fatty cake @ 5 mm at top; a middle watery layer; and the bottom 2 mm of the tube contained a white granular material.

The top fatty layer & the middle layer were used in the test.

		FINAL VIROS DILUTIONS 1/20	10^{-2}	10^{-3}	10^{-4}
G	HUMAN POOL B			—	—
H	HUMAN POOL B - CENT. MIDDLE LAYER			—	—
I	HUMAN POOL B - 100° C x 30 MIN			—	—
J	HUMAN POOL B - FATTY LAYER				—
K	Virus Control	—			

MAY 29 1950

SPECIMEN	VIRUS	NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	MORTALITY
G HUMAN POOL B [redacted]	1/20	1	-	-	-	PP	D																															
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UNTREATED MILK + LANSING	10^{-2}	1	-	-	-	-	PP	PP	D																												
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MAY 29 1950

SPECIMAN	VIRUS	NO	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35	MORTALITY	LD 50
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[redacted]	1/20	6	- - - - - - - P D		
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~~EXCRUFIED~~					
~~MIDDLE AGED~~					
~~SKIN MILK~~					
		1	- D		
100°C X 30 MIN		2	- PP PP D		
+		3	- PP D		
		4	- - P PP D		
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MAY 29 1950

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JUN 1 1950

EFFECT OF ETHYLENE OXIDE ON ANTI-POLIO FACTOR IN MILK

PURPOSE - To determine whether ethylene oxide can be used to destroy the organisms in milk without altering the anti-Lansing factor.

Milks used - Human milk pool A (Bounds, Perkins, Evelyn, Jones, Jackson) Consisting of milks 2-3 days after delivery which Contain positive anti-polio factor.

V.M. Cow # 6 - milk of 3/31/50 which Contains no anti-polio factor.

Methods - The milks were thawed & 5 cc amounts of each were removed for treatment ± ethylene oxide & 1 cc amounts of each were removed as Control.
The milks were Chilled for 3 hours prior to the CH_2CO treatment.

The ethylene oxide was transferred from its original brown, sealed glass Container to a bottle ± a greased ground glass stopper.

Following the Chilling of the milk, reagent, syringe, & Pipette. 0.05 cc of the ethylene oxide was added to each of the two 5 cc amounts of milk in the flasks which were in an ice bath in the Cold room. The treated milks were kept at @ 4°C for 1 hour and then placed in the ice water-37°C-to permit the ethylene oxide to evaporate.
The Control samples of milk were kept at 4°C.

JUN 8 1950

Following 23 hours at 37°C the flasks of treated milk were mixed ± Lansing virus, allowed to incubate for 1 hour at room temp. & inoculated into mice.

VIRUS - Lansing virus Pool IV of 8-16-49.

MICE - 18-20 gram Maryfield female albino

INOCULUM - 0.03 cc of the mixture I.C.

HUMAN POOL (A) UNTREATED - BAP 33 grey irregular Colonies ± hemolysis
HUMAN POOL (A) TREATED ± ETH OXIDE - BAP - 000

V.M. COW # 6 of 3/31/50 - UNTREATED - BAP - TNC - Round, yellow Colonies ± no hemolysis
V.M. COW #6 of 3/31/50 - TREATED ± ETH. OXIDE - BAP - TNC - Round, small yellow Colonies ± no hem.
Gram stain showed Colonies on both plates to be pos. Cocci

JUN 8 1950

LANSING 10^2

FINAL MILK DILUTIONS			
1/2	1/8	1/32	1/128

A.- HUMAN MILK POOL A - UNTREATED

B. HUMAN MILK POOL A - TREATED ± CH_2CO

FINAL VIRUS DILUTION
1/20 10^{-2}

C.- V.M. COW #6 of 3/31/50 - UNTREATED

D. V.M. COW #6 of 3/31/50 - TREATED ± CH_2CO

E. VIRUS CONTROL —

JUN 8 1950

SPECIMEN	MILK	NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	MORTALITY	LD 50
A HUMAN MILK Pool [redacted] UNTREATED + LANSING 10^{-2} 50 PD_{50}	1/2	1	-	-	-	PP	D																															1/8	
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		8	-	-	-	-	-	-	-	-	-	-	-	-	-	P	PP	PP	D																			

JUN 8 1950

SPECIMEN	MILK	NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	MORTALITY	LD50
B HUMAN MILK POOL A [redacted] TREATED CH_2CO + LANSING 10^{-2}	1/2	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	?	?	–	–	–	–	–	–	?	–	–		–	–	–	–	–	–	–	–	–	0/8	
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JUN 8 1950

SPECIMEN	VIRUS	NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	MORTALITY	LD50
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V.M. COW #6 of 3/31/50 MILK UNTREATED + LANSING		6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	D														
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D	1/20	1	-	?	D																																	8/8	
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V.M. COW #6 of 3/31/50 MILK TREATED C CH_2:C:O + LANSING		6	-	-	-	-	-	-	-	-	-	-	-	-	PP	D																						
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JUN 8 1950

SPECIMEN	VIRUS	NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	23	24	25	26	27	28	29	30	31	32	33	34	35	MORTALITY	LD50
E		1	-	P	D																																	
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		3	-	?	PP	D																																
	10^{-2}	4	-	-	P	PP	D																															
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CONTROL		6	-	-	-	-	-	-	P	PP	D																											
		7	-	-	-	-	-	-	-	-	-	?	PP	D																								
LANSING		8	-	-	-	-	-	-	-	-	-	-	P	PP	D																							
+																																						
SALINE		1	-	D																																		
		2	-	PP	D																																	
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EFFECT OF ETHYLENE OXIDE ON LANSING JUN 8 1950

2 two cc ampules of Lansing Pool V (6/6/50) thawed + placed in a tube. The tube containing the virus was chilled at @ 4°c for 1 hour after which 0.04 cc of ethylene oxide was added by means of a Cold 0.1 ml serological Pipette in the Cold room. The mixture was then transferred to a 50 cc flask.

The virus - ethylene oxide mixture was allowed to stand at @ 4°c for 1 hour after which it was placed in the 37°c incubator for 24 hours to permit the ethylene oxide to evaporate.

JUN 9 1950

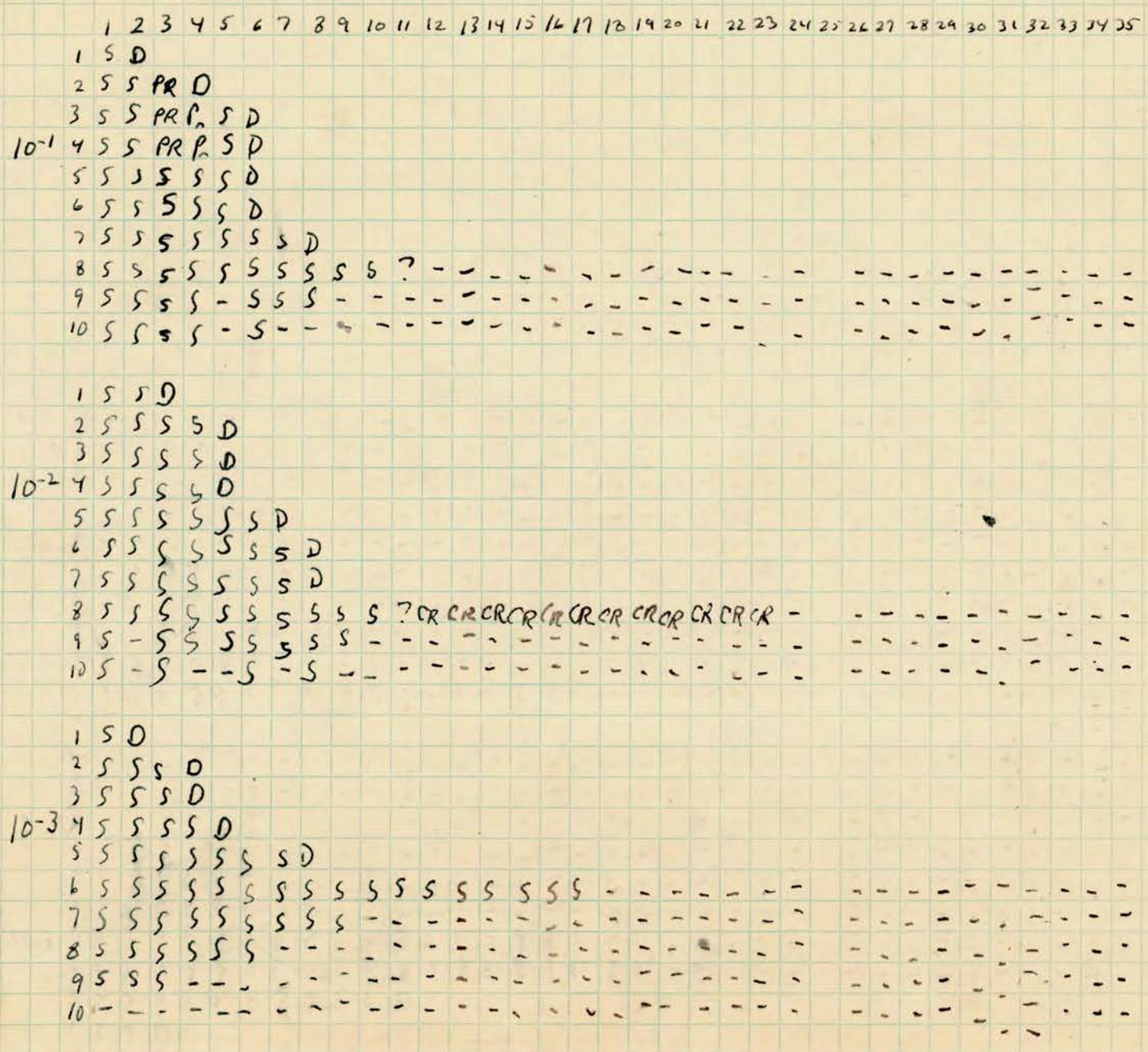
Following 24 hours at 37°c the treated Lansing virus was titred using dilutions of 10^{-1}, 10^{-2}, 10^{-3}, 10^{-4}, 10^{-5}. Dilutions made in saline.

After treatment - BAP - 50 small white colonies = no hemolysis which stained as Gram negative Cocci

LANSING ε ETHYLENE OXIDE

JUN 9 1950

LANSING
POOL IV
ε
$CH_2:C:O$



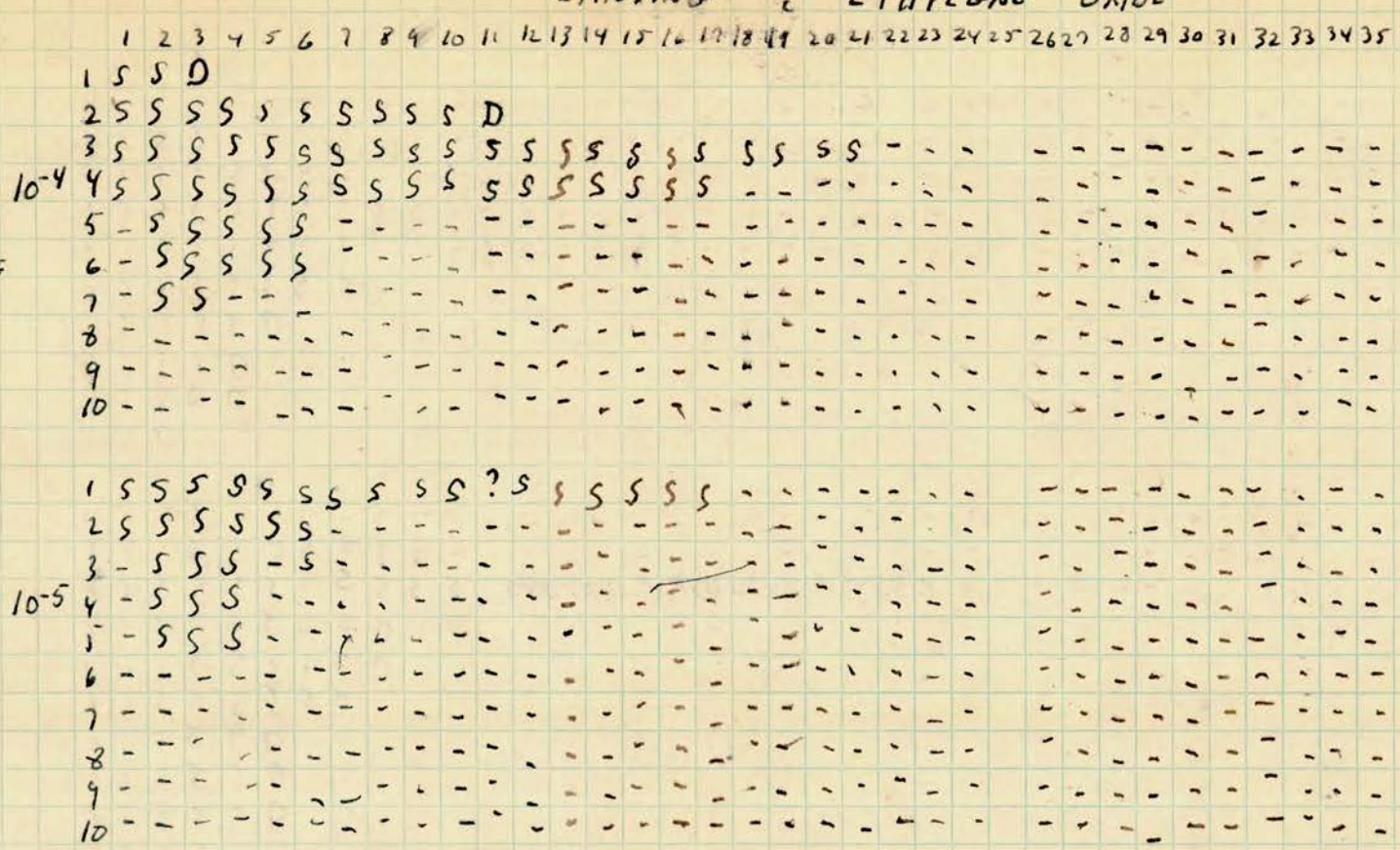
LANSING ETHYLENE OXIDE

JUN 9 1950

LANSING
POOL V
ETH. OXIDE

10^{-4}

10^{-5}



Tests on Human Milk from Boston Milk Directory

A pool of about 500 cc of human milk was obtained through the courtesy of Dr. Clement Smith. Milk collected by mothers at home & kept in refrigerator — collected in refrigerated containers

Part of this pool was heated at 210° F for 15 min. by the process usually employed in Boston and shipped here in wet ice — arrived cold.

The remainder was frozen in dry ice without heating and arrived here in the frozen state.

Culture on BAP of unheated, frozen milk — TNC - gray spreader & round gray-ish yellow colonies.

" " " 210° F for 15 min. " — 000

VIRUS - Lansing Pool IV of 8-16-49

	Virus 1:20	Virus 1:100
Frozen, unheated milk		
210° F for 15 min "		

Note - Above Pool made up on June 12, 1950 from following donors:

Date of delivery	Interval days
June 10	2
" 8	4
" 2	10
" 1	11
May 19	24
Apr 14	
" 12	
March 18	
" 16	
Dec 6 1949	

JUN 19 1950

SPECIMEN	VIRUS	NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	MORTALITY
F	1/20	1	-	PP	D																																	
		2	-	PP	D																																	
		3	-	PP	D																																	
		4	-	?	?	PP	D																															
		5	-	-	-	?	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BOSTON MILK DIRECTORY POOL of 6/12/50		6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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UNHEATED + LANSING		1	-	PP	PP	PP	D																														
		2	-	PP	PP	P	D																														
		3	-	?	(N)	(N)	D																														
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BOSTON MILK DIRECTORY POOL 6/12/50		6	-	-	-	-	-	-	P	PP	D																										
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HEATED 210° F + LANSING		1	-	P	D																																
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MORTALITY

F: 4/8

G: 4/8

For Controls see Human Quantitative Test of 6/19/50 (Mrs Safir)

SUMMARY OF TEST OF OCTOBER 10, 1951

EFFECT OF HEATING AT 60°C, 80°C AND 100°C FOR 30 MINUTES ON LANSING NEUTRALIZING SUBSTANCE IN BOSTON "LATE" MILK OF 7/24/50.

SPECIMEN	TREATMENT	MORTALITY AT INDICATED FINAL DILUTION OF VIRUS				LOG OF LD_{50}	NEUTRALIZING INDEX
		1.6	2.3	3.0	4.0		
BOSTON MILK DIRECTORY OF LATE HUMAN MILK OF 7-24-50	UNHEATED	4/8	2/7	1/7	—	1.8	63
	60°C x 30 MIN.	3/8	0/8	0/8	—	1.5	130
	80°C x 30 MIN.	8/8	7/8	8/8	—	3.4	2
	100° x 30 MIN	8/8	8/8	6/8	—	3.3	2.
CONTROL	SALINE + LANSING	·	8/8	6/8	3/8	3.6	

EFFECT OF HEATING AT 60°C, 80°C AND 100°C FOR 30 MINUTES ON LANSING NEUTRALIZING SUBSTANCE IN BOSTON MILK DIRECTORY LATE HUMAN MILK OF 7/24/50

PURPOSE: To determine heat stability of the Lansing neutralizing substance in Boston milk.

VIRUS: Lansing virus – Pool VI of 2/5/51. 10% suspension in saline. Centrifuged 2000 rpm x 10 min. to remove flocculent ppt.

PROCEDURE: The milk was distributed in glass ampules and sealed. Then immersed in water baths at either 60, 80 or 100°C for 30 minutes.
Virus was diluted in saline and distributed in 0.2 ml amounts in dilutions of 1:20, 1:100, 1:500. To the appropriate tubes milk was added in 0.2 ml amounts. Final dilutions of virus 1:40, 1:200, 10^{-3}.
Controls in saline were 1:200, 10^{-3}, 10^{-4}

MICE: 18-20 gram Rockefield albinos ♀

OCT 10 1951

SPECIMEN	VIRUS	NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	MORTALITY	LD_{50}
A BOSTON MILK DIRECTORY-LATE HUMAN MILK OF 7/24/50	1:40	1	–	?	?	–	P	D																															$10^{-1.8}$
		2	–	–	–	–	–	–	–	–	–	–	–	P	P	D																							
		3	–	–	–	–	–	–	–	–	–	–	–	–	P	D																							
		4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	P	P	D						4/8	N.I.
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+ LANSING UNHEATED PENICILLIN (0.004) STREPTOMYCIN (1 mg) ADDED (0.01 ml)	1:200	1	–	–	–	D	S	D																													2/7	
		2	–	–	–	S	D																																
		3	–	–	–	–	–	–	–	–	–	–	–	–	?	–	–	P	D																				
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	10^{-3}	1	D																																		1/7	
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SPECIMEN	VIRUS	NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	MORTALITY	LD50
B (CONT) BOSTON MILK DIRECTORY-LATE HUMAN MILK OF 7/24/50 + LANSING 60°C x 30 MIN	1:200	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0/8	
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C BOSTON MILK DIRECTORY-LATE HUMAN MILK OF 7/24/50 + LANSING 80°C x 30 MIN	1:40	1	–	D																																		8/8	$10^{-3.4}$ N.I. 11 2
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SPECIMEN	VIRUS	NO	1 – 35	MORTALITY	LD_{50}
C (CONT)		1	— P D		
		2	— P P P D		
BOSTON MILK	10^{-3}	3	— — P P D		
DIRECTORY LATE		4	— — P P P P D	8/8	
HUMAN MILK OF 7/25/50		5	— — — — — — CNS P E D		
+		6	— — — — — — — — — — — — T D		
LANSING		7	— — — — — — — — — — — — — — — — P P P D		
80°C x 30 MIN		8	— — — — — — — — — — — — — — — — — — P E P D		
D		1	— D		$10^{-3.3}$
		2	— D		
		3	— D		N.I.
	1:40	4	— P D		"
BOSTON MILK		5	— W P P D	8/8	2
DIRECTORY - LATE		6	— — — — — P P D		
HUMAN MILK		7	— — — — — — CNS P P P P P D		
OF 7/24/50		8	— — — … — h→ P P P P D		
+		1	— D		
LANSING		2	— P R D		
		3	— P D		
	1:200	4	— P D	8/8	
100°C x 30 MIN.		5	— — D		
		6	— — D		
		7	— — P P D		
		8	— — — … — P P P P D		
		1	— W W D		
		2	— — P P D		
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	10^{-3}	4	— — — … — D	6/8	
		5	— — — … — W W W W P P D		
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SPECIMEN	VIRUS	NO	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35	MORTALITY	LD_{50}
E	1:200	1	– P P D	8/8	$10^{-3.6}$
		2	– CNS D		
		3	– – D		
		4	– – P D		
		5	– – – – – – – – CNS D		
		6	– – – – – – – – – E P D		
CONTROL		7	– – – – – – – – – – E h D		
		8	– – – – – – – – – – – – – – h + D		
SALINE + LANSING	10^{-3}	1	– P D	6/8	
		2	– P P P D		
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		4	– – – – – – CNS CNS CNS D		
		5	– – – – – – – – – ? ? ? – – – – P P P P P P P P P P D		
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	10^{-4}	1	– – P P P P P D	3/8	
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SUMMARY OF TEST OF OCTOBER 22, 1951

EFFECT OF HEATING AT 60°C, 80°C AND 100°C FOR 30 MINUTES ON LANSING NEUTRALIZING SUBSTANCE IN CGH EARLY HUMAN MILK OF 5/29/50 A.M.

SPECIMEN	TREATMENT	MORTALITY AT INDICATED FINAL DILUTION OF VIRUS				LOG OF LD 50	NEUTRALIZING INDEX
		1.6	2.3	3.0	4.0		
CGH POOL OF EARLY HUMAN MILK OF 5/29/50 A.M.	UNHEATED	3/8	1/8	0/8	—	1.5	160
	60°X30 MIN.	4/8	0/8	0/7	—	1.6	130
	80°CX30 MIN.	8/8	8/8	8/8	—	3.5	2
	100°CX30 MIN.	8/8	8/8	5/8	—	3.2	3
CONTROL	SALINE + LANSING		8/8	8/8	2/8	3.7	

EFFECT OF HEATING AT 60°C, 80°C AND 100°C FOR 30 MINUTES ON LANSING NEUTRALIZING SUBSTANCE IN CGH EARLY HUMAN MILK OF 5/29/50 AM.

PURPOSE: To determine heat stability of the Lansing neutralizing substance in CGH Bot of early human milk of 5/29/50 AM.

VIRUS: Lansing virus - Pool VI of 2/5/51. 10% suspension in saline. Centrifuged 2000 rpm x 10 min. to remove flocculent ppt.

PROCEDURE: The milk was distributed in glass ampules and sealed. Then immersed in water bath at 60°, 80° & 100°C for 30 minutes. Virus was diluted in saline and distributed in 0.2 ml amounts in dilutions of 1:20, 1:100 and 1:500. To the appropriate tubes milk was added in 0.2 ml amounts. Final dilutions of virus was 1:40, 1:200, 10^{-3}. Controls diluted with saline were 1:200, 10^{-3}, 10^{-4}.

MICE: 18-20 gram Maxfield albino ♀

OCT 2 2 1951

SPECIMEN	VIRUS	NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	MORTALITY	LD 50
A CGH POOL OF EARLY HUMAN MILK OF 5/29/50 AM + LANSING UNHEATED	1:40	1	–	–	–	P	P	P	D																													3/8	$10^{-1.5}$ N.I. 11 160
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B CGH POOL OF EARLY HUMAN MILK OF 5/29/50 AM + LANSING HEATED 60°C x 30 min	1:40	1	–	–	–	–	–		–	–	–	–	–	–	–	–	–	D																				4/8	$10^{-1.6}$ N.I. 11 130
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SPECIMEN	VIRUS	NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	MORTALITY	LD 50
B (cont.) CGH Pool of Early Human Milk of 5/29/50 + Lansing Heated 60°C x 30 Min.	1:200	1	–	–	–	–	/	–	–	–	;	_	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
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C CGH Pool of Early Human Milk of 5/29/50 + Lansing Heated 80°C x 30 Min.	1:40	1	–	PP	D																																	8/8	$10^{-3.5}$ N.I. = 2
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Lansing Heated 80°C x 30 Min.	1:200	1	–	D																																		8/8	
		2	–	–	P	P	P	P	D																														
		3	–	–	–	–	–	–	–	PPP	D																												
		4	–	–	–	–	–	–	–	–	D																												
		5	–	–	–	–	–	–	–	–	PP	D																											
		6	–	–	–	–	–	–	–	–	–	–	–	P	P	D																							
		7	–	–	–	–	–	–	–	–	–	–	–	–	–	D																							
		8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	D																						

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SPECIMEN	VIRUS	NO	1–35 (daily record)	MORTALITY	LD 50
C (CONT.) CGH POOL OF EARLY HUMAN MILK OF 5/29/50 AM + LANSING HEATED 80°C x 30 MIN.	10^{-3}	1	– P P D	8/8	
		2	– – – – – P D		
		3	– – – – – P D		
		4	– – – – – – – – – – P W D		
		5	– – – – – – – – – – W D		
		6	– – – – – – – – – – – D		
		7	– – – – – – – – – – – P P D		
		8	– – – – – – – – – – – – – – – – – – D		
D CGH POOL OF EARLY HUMAN MILK OF 5/29/50 AM	1:40	1	– D	8/8	$10^{-3.2}$ N.I. " 3
		2	– D		
		3	– D		
		4	– P P D		
		5	– – – – – P D		
		6	– – – – – – – P D		
		7	– – – – – – – – – – P P D		
		8	– – – – – – – – – – – – P P P P P P D		
+ LANSING HEATED 100°C x 30 MIN.	1:200	1	– D	8/8	
		2	– – D		
		3	– – D		
		4	– – P P D		
		5	– – – – – P P P D		
		6	– – – – – ? P P D		
		7	– – – – – – – P D		
		8	– – – – – – – – W D		
	10^{-3}	1	– – W W P D	5/8	
		2	– – – – – – – – – P W W D		
		3	– – – – – – – – – – – – P P D		
		4	– – – – – – – – – – – – – W P D		
		5	– – – – – – – – – – – – – – – – P D		
		6	– –		
		7	– –		
		8	– –		

SPECIMEN	VIRUS	NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	MORTALITY	LD 50
E	1:200	1	–	–	P	D																																8/8	$10^{-3.7}$
		2	–	–	P	P	P	D																															
		3	–	–	–	–	–		D																														
		4	–	–	–	–	–		–		P	P	P	D																									
		5	–	–	–	–	–		–		–	–	P																									
		6	–	–	–	–	–		–		–	–	–	D																									
CONTROL		7	–	–	–	–	–		–		–	–	–	–		–	?	P	W	D																			
		8	–	–	–	–	–		–		–	–	–	–		–	–	–	–	–	T		D																
SALINE		1	–	–	W	P	P	D																															
		2	–	–	–	–	–		D																														
+		3	–	–	–	–	–		P	P	T	D																											
	10^{-3}	4	–	–	–	–	–		–		–	–	–	–		P	P	P	D																				
		5	–	–	–	–	–		–		–	–	–	–		E	P	E	D																				
LANSING		6	–	–	–	–	–		–		–	–	–	–		–	?	D																					
		7	–	–	–	–	–		–		–	–	–	–		–	–	–	P	D																			
		8	–	–	–	–	–		–		–	–	–	–		–	–	–	H	P	P		D																
		1	–	–	–	P	D																															
		2	–	–	–	–	–		–		–	–	–	–		–	–	?	P	D																			
		3	–	–	–	–	–		–		–	–	–	–		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
	10^{-4}	4	–	–	–	–	–		–		–	–	–	–		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2/8	
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