

April 5, 1951
Comparative test for neutralizing Antibody vs. own virus in

3 month and 3 year sera of patient [redacted]

Virus: Gen II of 12-8-1947 (no viral m), Cumulative titer $10^{-3.6}$ in 1948
(virus titration 5-14-48 to 10-20-48 was $10^{-3.5}$)

Sera to be tested: 3 mo serum (11-11-47)
3 year serum (5-31-50)

Selection of dose of virus: 10^{-2} , same as that used in test of 9-20-48, will be final dilution of virus. (32 p.d. on basis of simultaneous titration)

Procedure: Prepare following dilutions of indicated sera in saline:

A	3 mo serum: 1:16 = 0.1 cc of undil. serum + 1.5 cc saline.	remainder 1.2 cc
B	1:64 = 0.4 cc of 1:16 + 1.2 cc saline	1.2 cc
C	1:256 = 0.4 cc of 1:64 + 1.2 cc saline. 7	1.2 cc
N.B. No 3 mo serum left!!!		discard 0.4 cc.
D	3 yr serum: undil. = 3.2 cc	1.2 cc
E	1:4 = 0.4 cc undil. ser. + 1.2 cc saline	1.2 cc
F	1:16 = 0.4 cc of 1:4 + " "	1.2 cc
G	1:64 = 0.4 cc of 1:16 " + " "	1.2 cc
H	1:256 = 0.4 cc of 1:64 " + " "	1.2 cc
		discard 0.4 cc.
I	Saline control: 1.4 cc saline.	

Virus 1:50 (in saline): $1\frac{1}{2}$ cc 20% + $13\frac{1}{2}$ cc saline = 15 cc 1:50

Add to each tube A-H 1.2 cc virus (1:50) and to I 1.4 cc virus (1:50) = total amount 11 cc (1:50)

Finished 5 P.M.

Leave at room temp. (25°C) for one hour and in refrigerator overnight.

Immediately prior to inoculation of monkeys prepare 10 fold dilutions in saline from saline control tube as follows:

for 10^{-3} = 0.3 cc 10^{-2} + 2.7 cc of saline.
 10^{-4} = 0.3 cc 10^{-3} + 2.7 cc of saline.
 10^{-5} = 0.3 cc 10^{-4} + 2.7 cc of saline.

Inoculate 0.5 cc into right thalamic area of each of 4 rhesus monkeys.

Struck 9³⁵ Virus dil. made $10^{2.5}$
Finished 10⁴⁵.

No accidents, all animals well except m 1466 who showed blood diarrhea with time. (Treated with sulfadiazine)

Preparation	Dilution	Rhesus no	Result	
3 mo serum (11-11-47)	1:256	✓ 1922		x
		✓ 1923	+16	x
		✓ 1924		x
		✓ 1925		x
	1:64	✓ 1926	+13	x
		✓ 1927		x
		✓ 1928		x
		✓ 1929		x
	1:16	✓ 1930	+11	x
		✓ 1931		x
		✓ 1932		x
		✓ 1933	+14	x
3 year serum	1:256	✓ 1934		x
		✓ 1935	D7	x
		✓ 1936	+7	x
		✓ 1937	+17	x
	1:64	✓ 1938		x
		✓ 1939		x
		✓ 1940		x
		✓ 1941	+ (6) Histological positive - Acute Polio	x
	1:16	✓ 1942		x
		✓ 1943	+ (12)	x
		✓ 1944		x
		✓ 1945		x
Virus control and titration	10 ⁻⁵	✓ 1946		x
		✓ 1947		x
		✓ 1948		x
		✓ 1949	Pg Hist neg! ✓	x
	10 ⁻⁴	✓ 1950	+25	x
		✓ 1951		x
		✓ 1952		x
		✓ 1953		x
	10 ⁻³	✓ 1954		x
		✓ 1955		x
		✓ 1956	+9	x
		✓ 1957		x
10 ⁻³ , 10 ⁻⁴ and 10 ⁻⁵ dilutions made at just before inoculation	10 ⁻⁴	✓ 1958	P6	x
		✓ 1959	P11	x
		✓ 1960	P7	x
		✓ 1961		x
	10 ⁻³	✓ 1962	P12	x
		✓ 1963	P7	x
		✓ 1964	+ (5)	x
		✓ 1965	+10 Pg (hist also +)	x
	10 ⁻²	✓ 1966	+ (1)	x
		✓ 1967	P7	x
		✓ 1968	P9	x
		✓ 1969	P6	x

1:512+?

X2

=1:1024+?

1:362+?

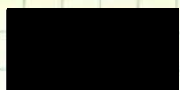
X2

=1:724+?

Histology neg

Pg (hist also +)

10^{-4.3} made 4.33



- serum dilution neutralization

Rh 1922

3 mo serum 1:256

Date	Day	Remarks
April 6 th	0	
" 7	1	
" 8	2	
" 9	3	
" 10	4	
" 11	5	
" 12	6	
" 13	7	
" 14	8	
" 15	9	
" 16	10	
May 5	5 29	Killed. Histot. sections in Kenker (mammary gland, endometrium)

Rh 1923

3 mo serum 1:256

Date	Day	Remarks
April 6 th	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	
14	8	
15	9	
16	10	
21	15	Blood diarrhea, looks ill. Nearly prostrate. Sulfadiazine therapy.
22	16	Dead in cage. Sections CNS in Tencher.

serum dilution neutralization

Rh 1924

3 mo serum 1: 256

Date	Day	Remarks
April 6 th	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	
14	8	
15	9	
16	10	
May 5	20	Killed Sections EWS in Tenke

serum dilution neutralization.

Rh 1925

3 mo serum 1:256

Date	Day	Remarks
April 6 th	0	
7 th	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	
14	8	
15	9	
16	10	
May 5	20	Killed. Sections CNS in Leuker.

serum dilution neutralization

Rh 1926

3 mo serum 1:64

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	
14	8	
15	9	
16	10	
17	11	
18	12	
19	13	died in cage. bloody discharge from the anus was day before apparently healthy. Floppy CNS in temper. acute severe hemorrhagic enteritis with free blood in the lumen of the colon. No ulcers.

serum dilution neutralization

Rh 1927

3 mo serum 1:64

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	
14	8	
15	9	
16	10	
17	11	
18	12	
19	13	
May 5	29	Killed. Section CNS in Penker.

serum dilution neutralization

Rtr 1928

3 mo serum 1:64

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	
14	8	
15	9	
16	10	
May 5	29	Killed sections CNS on Penker

serum dilution neutralization

Rh 1929

3 mo serum 1:64

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	
14	8	
15	9	
16	10	
May 5		Killed. Sections LWS in Tanker.

serum dilution neutralization

Rh 1930

3 mo serum 1:16

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	Blood diarrhea. Therapy sulfadiazine 2x daily for 3 days. i.p.
11	5	
12	6	
13	7	Looks ill. T. 98.8. No diarrhea. 50cc saline i.p.
14	8	Stool very loose, hunched Look sick 50cc saline i.p. 2x
15	9	Done (loose stools but no blood or slime). Saline 2x daily
16	10	Looks somewhat better Saline 2x "
17	11	dead in cage. Sections CNS in Leuker. No gross lesions in thorax or abdomen except enteritis.

Apr 1931

3 m serum 1:16

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	
14	8	{ No diarrhea Blood diarrhea. Sulfadiazine 3 days 2x daily Feces normal. Ends better
15	9	
16	10	
17	11	
May 5	29	Killed sections CNS in Penker.

serum dilution neutralization

Rh 1932

3rd serum 1:16

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	bloody diarrhea. Sulfz treatment 3 days 2 x daily.
14	8	
15	9	Feces normal.
16	10	
May 5	20	Killed Sulfz in Benches

serum dilution neutralization

Rh 1933

3 ms serum 1:16

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	
14	8	
15	9	
16	10	
17	11	
18	12	Weak. Doesn't eat. T. 97° 50cc saline i.p. 2x daily Nocturnal
19	13	Weak and dull. 50cc saline i.p. 2x daily
20	14	Dead in cage (mumal feces protruded). Sections CMS in Renes. No gross lesions in viscera or abdomen.

serum dilution neutralization

Rh 1934

3 yr serum 1:256

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	
14	8	
15	9	
16	10	
17	11	
18	12	
19	13	
20	14	
21	15	
22	16	
May 7	31	Killed. Sections CWS on Renker.

serum dilution neutralization

Rh 1935

3 yr serum 1:256

Date	Day	Remarks
April	6	0
	7	1
	8	2
	9	3
	10	4
	11	5
	12	6
	13	7
	14	8
	15	9
	16	10

Swimming dead in cage. Autopsy: only slight enteritis.
Histoh. sections C.N.S. in Zenker.

serum dilution neutralization

Rh 1936

3 yr serum 1:256

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	dead in cage. Showed blood in cage.
14	8	Autopsy: hemorrhagic enteritis
15	9	Sections C.N.S. in Kenzie
16	10	

serum dilution neutralization

Rhr 1937

3 yr serum 1:256

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	bloody diarrhea. Therapy sulfadiazine 2x daily for 3 days. i.p.
11	5	
12	6	
13	7	
14	8	
15	9	
16	10	
17	11	
18	12	
19	13	
20	14	diarrhea. Looks ill. sulfadiazine therapy 2x daily for 3 days i.p.
21	15	looks better
22	16	Feces rather normal but looks ill.
23	17	Dead in cage. Sections C.N.S. in yolk sacs. Slight hematoxylin embolus

STANDARD B & P "NOTEAR"

STANDARD B & P "NOTEAR"

serum dilution neutralization

Rh 1938

3 yr serum 1:64

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	
14	8	
15	9	
16	10	
17	11	
18	12	
19	13	
20	14	
21	15	Blood diarrhea. Sulfadiazine therapy - 3 days

serum dilution neutralization

RA 1939

3 yr serum 1:64

Date

Day

Remarks

April 6

0

7

1

8

2

9

3

10

4

11

5

12

6

13

7

14

8

15

9

16

10

May 7

31

Killed. Sections CNS in Teuber

serum dilution neutralization

Rh 1940

3 yr serum 1:64

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	
14	8	
15	9	
16	10	
21	15	Heavy blood diarrhea - antitoxin therapy
22	16	Very meager, looks ill but no blood diarrhea. 50 cc. Solins I.P.
23	17	Same.
May 7	31	Killed sections CNS in Tenckee

serum dilution neutralization

Rh 1941

3 $\frac{1}{2}$ serum 1:64

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	This evening 8 ¹⁵ pm. animal dead in cage. No diarrhea (normal feces) Seems to have eaten up his food.
13	7	Autopsy: no gross lesions.
14	8	Histol section C.N.S. in tank.
15	9	
16	10	

Histological procedure

Acute, extensive neuronophagia
in spinal cord; ~~also in~~
acute lesions also present in
medulla

Rh 1942

serum dilution neutralization

3 yr serum 1:16

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	
14	8	
15	9	
16	10	
17	11	
18	12	
19	13	
20	14	
21	15	Heavy blood diarrhea. Infusion therapy.
22	16	Looked somewhat better.
23	17	"
24	18	Feces "normal" but still looks ill. "Injection saline i.p."
May 1	22	Killed
		Sections CNS in Zenker

serum dilution neutralization

Rtr 1943

3 yr serum 1:16

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	
14	8	
15	9	
16	10	
17	11	very meager, very weak. Diarrhea. So poor condition
18	12	Rate in the evening sections C. N. S. in Lumber. } 4-19. Autopsy: slight enteritis

Rh 1944

3 yr serum 1:16

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	
14	8	
15	9	
16	10	
May 7	31	Killed. Sections CNS in Zenker.

serum dilution neutralization

Rh 1945

3 yr serum 1:16

STANDARD B & P "NOTEAR"

STANDARD B & P "NOTEAR"

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	
14	8	
15	9	
16	10	
May 8	32	Killed. Sections C.N.S. in Zenker.

serum dilution neutralization

Rh 1946

3 y₂ serum 1:4

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	
14	8	
15	9	
16	10	
May 7	31	killed sections CNS in Reuber

serum dilution neutralization

Rh 1947

3 yr serum 1:4

Date	Day	Remarks
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April 6	0	
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7	1	
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8	2	
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9	3	
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10	4	
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11	5	
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12	6	
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13	7	
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14	8	
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15	9	
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16	10	
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May 1	11	
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2	12	
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3	13	
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4	14	
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5	15	
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6	16	
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7	17	
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8	18	
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9	19	
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10	20	
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11	21	
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12	22	
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13	23	
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14	24	
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15	25	
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16	26	
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17	27	
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18	28	
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19	29	
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20	30	
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21	31	
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31		
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Killed sections CNS in Leaden

Serum neutralization

Rh 1948

3 1/2 serum 1:4

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	
14	8	
15	9	
16	10	
May 7	21	killed. Sections CNS in Zenker.

serum neutralization

Rh 1949

3 y 2 serum 1:4

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	
14	8	
15	9	Total paralysis of lowers and uppers. Prostrate. 1 hr later dead.
16	10	A few pieces of medulla and cord in Zenker. Remainder of cord + medulla for virus
		Histol. negative!

serum dilution neutralization

Rhr 1950

3 1/2 serum undiluted

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	
14	8	
15	9	
16	10	
30	24	Last days losing weight, looks ill. Slight diarrhea.
May 1st	25	dead in cage. Sections CNS in Zenker Autopsy: chronic enteritis. No abscess, no hemorrhages.

serum dilution neutralization

Rh 1951

3 yr serum undiluted

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	Coughing for a few days
12	6	
13	7	
14	8	
15	9	
16	10	
May 7	31	Killed. Sections CWS in Renke



serum dilution neutralization

Rh 1952

3 y₂ serum undiluted.

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	
14	8	
15	9	
16	10	
May 7	31	killed sections C.H.S. on Reuber

serum dilution neutralization

3 yr serum undiluted

Rh 1953

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	
14	8	
15	9	
16	10	
May 17	31	filled. Sections CNS in Leuker.

Virus control

Rh 1954

10⁻⁵

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	
14	8	
15	9	
16	10	
May 7	31	Killed. Sections CWS in Bender

Virus control

10^{-5}

Rh 1955

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	
14	8	
15	9	
16	10	
May 8	32	Killed sections C N-S in Tenker

Rh 1956

virus control

10-5

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	coughs
13	7	
14	8	
15	9	
16	10	
May 8	30	Killed sections CNS in Reuter

Rh 1957

Virus control

10⁻⁵

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	Ablood diarrhea. Sulfis treatment 3 days 2x daily.
14	8	Mucoid Blood diarrhea
15	9	Moribund. Sections C.N.S. in zenker.
16	10	

Rh 1958

Virus control

 10^{-4}

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	face looks red. - hemorrhages besides and under the eyes (symmetrically)
12	6	<u>Nervous.</u> } Total paralysis of the lowers. Killed for virus.
13	7	
14	8	
15	9	
16	10	
May 8	22	hatched.

ch 195g

Virus control

10-4

Date	Day	Remarks
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April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	
14	8	
15	9	
16	10	
17	11	

Analysis of L. upper - weakness lowers
(to be killed)
killed for virus.

Rh 1960

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	Paralysis deltoid (L upper)
14	8	Same
15	9	Total paralysis of lowers and rt deltoid. Cannot sit or stand.
16	10	Harbored. Eaten and discarded

Virus control

10^{-4}

Rh 1961

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	
14	8	
15	9	
16	10	
May 10	34	Killed sections CNS in Hucker

Rh 1962

Virus control

10-3

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	
14	8	Pilomotor.
15	9	
16	10	
17	11	very excited
18	12	bremsen - total paralysis of left arm - weakness of lower - altered voice. killed for virus.

Rh 1963

Virus culture

10⁻³

Date	Day	Remarks
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April 6	0	
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7	1	
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8	2	
---	---	--

9	3	
---	---	--

10	4	
----	---	--

11	5	
----	---	--

12	6	
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13	7	
----	---	--

14	8	
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15	9	
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16	10	
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Partial paralysis lower + partial p. R. upper
Extensive paralysis of extremities, sit with difficulty
Dead in cage. Recorded.

STANDARD B & P "NOIEAR"

STANDARD B & P "NOIEAR"

Rh 1964

Virus control
10-3

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	dead in cage. Autopsy:
12	6	histol. sections: enlargements, card, medulla, midbrain, thalamus.
13	7	Thymus and abd.: no gross lesions except a slight enlargement.
14	8	
15	9	
16	10	
histology for. (checked by Dr. Sabin) slight pneumonia		

Rhr 1965

Virus control
10-3

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	Blood diarrhea.
14	8	Blood diarrhea, excited, Pilo motor. Sulfadiazine therapy.
15	9	Weakness of lowers. Heavy blood diarrhea.
16	10	Manbana, nearly dark. Labry sections Sections CNS in Lesker

Rh 1966

Virus control

10⁻²

Date	Day	Remarks
April 6	0	Looks ill. Blood + slime in feces. Treatment sulfadiazine 2x daily for 3 days. i.p.
7	1	This morning dying and 1 hr later dead. Autopsy: I have no gross
8	2	lesions. Abdomen: acute hemorrhagic enteritis of the whole colon, with pseudo-membranes and swelling of the mucosa. No ulcers. Spleen not enlarged. Liver normal.

~~14~~ 8

Rh 1967

Virus combot 10-2

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	Partial paralysis lower & R upper (deltoid)
14	8	Extensive paralysis, upper, lower, back, prostrate.
15	9	Same,
16	10	maribund. Latent. discussed

STANDARD B & P "NOTAR"

STANDARD

Rh 1968

Virus control
10-2

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	
13	7	
14	8	
15	9	Weakness of lowers.
16	10	Total paralysis of L. upper. Partial " " R upper. weakness of lowers and back muscles. Killed for virus

Rhr 1969

Virus control 10-2

Date	Day	Remarks
April 6	0	
7	1	
8	2	
9	3	
10	4	
11	5	
12	6	paralysis of the lowers. killed for virus.
13	7	
14	8	
15	9	
16	10	