

Roaring Spring

Compositions

Name Sn-117m

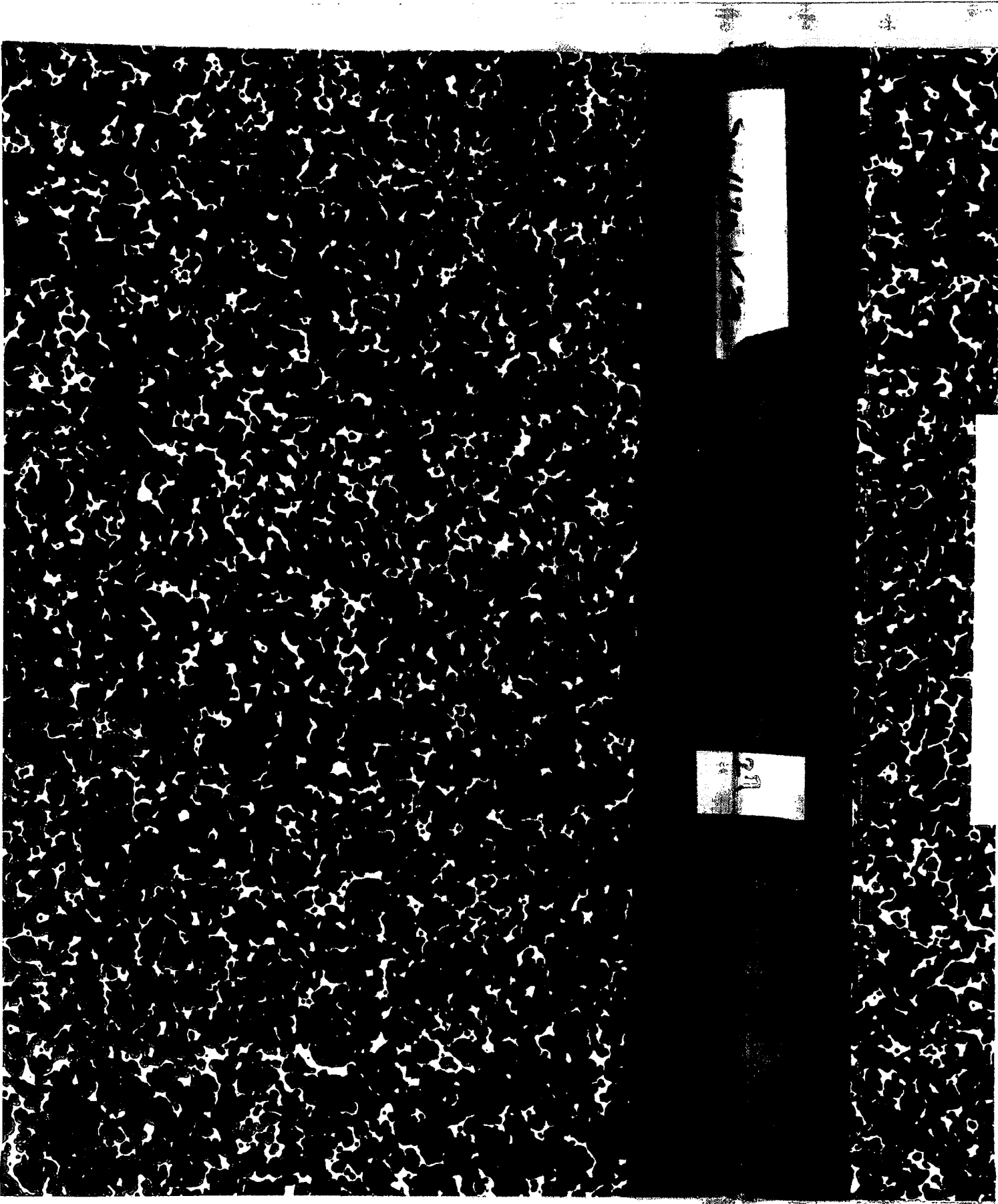
School V79 Cella

Grade 10/98

9 3/4 in. x 7 1/2 in. 60 Leaves

Roaring Spring, PA 16873





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Efficiency of Radiation Safety γ -counter

~~028~~ 5

①

②

10/1/98

③

Exp 1

Survival VT9 10.5°C 72h

Stock Sn-117m from Vial 2A

2.63 $\mu\text{Ci}/\text{ml}$ on 9/24/98

1.84 $\mu\text{Ci}/\text{ml}$ on 10/1/98

| Tube | $\frac{\mu\text{Ci}}{\text{ml}}$ | $\frac{\mu\text{Ci MEMB}}{20 \mu\text{Ci}/\text{ml}}$ | ml MEMB |
|------|----------------------------------|---|---------|
| 1 | 0 | 0 | 1 |
| 2 | 0 | 0 | 1 |
| 3 | 0.1 0.1 | 0.01 | 0.99 |
| 4 | 0.3 0.3 | 0.03 | 0.97 |
| 5 | 0.5 0.5 | 0.05 | 0.95 |
| 6 | 1 1 | 0.1 | 0.9 |
| 7 | 2 2 | 0.2 | 0.8 |
| 8 | 3 3 | 0.3 | 0.7 |
| 9 | 5 5 | 0.5 | 0.5 |
| 10 | 10 | <u>1</u> | 0 |

Prepare 2.5 ml MEMB @ 20 $\mu\text{Ci}/\text{ml}$

so need 50 μCi \rightarrow 27.2 μCi stock

10/1/98

- V79 cells removed w/ trypsin, dilute to 4×10^5 /ml in MEMB
- Add 1 ml cells 4×10^5 /ml in MEMB to 10 tubes
- Roll at 37°C 5% CO₂ 2:30pm
- Add radioactivity according to table on pg. 3
- Tubes returned to roller 5pm 10/1/98



10/2/98

- Centrifuge 2000 rpm 4°C 10 min 9:30 am
- Transfer 100µl super to 8-tubes
- 3 x 10 µl to separate 8-tubes labeled M



10/5/98

- Wash 3X 10ml wash MEMA using 2000 rpm 4°C 10 min
- Resuspend in 2ml MEMA
- Syringe 5X with 5ml syringe 21g needle
- Place in roller at 10.5°C 11:30 am
- 9:30 am tubes removed from roller
- Washed 3X with wash MEMA
- Resuspended in 2ml MEMA
- Syringe 5X, 100µl to Coulter cup with 20µl isotope
- ~~100~~ 0.5 → 4.5 ml (serial dilutions)
- Plate dilutions (1ml) + 4ml MEMA in 60mm Petri
- 3 x 300µl cell suspension into 8-tubes

Survival Expt. ctd.

- Count tubes in Rad Safety Beckman 5500
- Recount IOC in Canberra Series 10 NaI

| 2" <u>Canberra</u> | 3" <u>Beckman</u> |
|-----------------------|----------------------|
| 30674 | 34196 |
| 30933 | 34304 |
| <u>30888</u> | <u>34347</u> |
| 30832 | 34282 |

$$\begin{aligned}
 \text{EFF (Rad Safe } \gamma\text{-counter)} &= \text{Canberra eff} \left(\frac{\text{Beckman cpm}}{\text{Canberra cpm}} \right) \\
 &= 0.62 \left(\frac{34282}{30832} \right)
 \end{aligned}$$

$\text{EFF (Rad Safe } \gamma\text{-counter)} = 0.69$

for Sn-117m

Survival Exp. I Contd.

Coulter Counts (100 μ l)

Tube

| | |
|----|---------------|
| 1 | 729, 693, 680 |
| 2 | 685, 675, 679 |
| 3 | 475, 462, 478 |
| 4 | 601, 620, 611 |
| 5 | 593, 569, 568 |
| 6 | 568, 572, 593 |
| 7 | 531, 525, 506 |
| 8 | 555, 503, 514 |
| 9 | 514, 532, 557 |
| 10 | 529, 510, 529 |

Survival Expt. #1, Cont'd

10/13/98

Colony Count

| Tube # / dilution | # of Colonies | Avg. Colony | SP |
|-------------------|---------------|-------------|--------|
| 1.2 | 187, 182, 190 | 199.83 | - |
| 2.2 | 228, 199, 213 | | |
| 3.3 | 66, 68, 61 | 6.5 | 0.0325 |
| 4.3 | 39, 37, 44 | 4 | 0.0200 |
| 5.3 | 43, 37, 33 | 3.76 | 0.0188 |
| 6.4 | 160, 153, 175 | 1.62 | 0.0081 |
| 7.4 | 250, 150, 170 | 1.9 | 0.0095 |
| 8.4 | 122, 133, 125 | 1.26 | 0.0063 |
| 9.4 | 137, 132, 131 | 1.33 | 0.0066 |
| 10.4 | 58, 60, 50 | 0.56 | 0.0028 |