010492

AMERICAN CANCER SOCIETY
GRANTS IN CANCER RESEARCH

APPLICATION FOR EXTENSION OF GRANT

Date: September 23, 1955

Committee on Growth
National Academy of Sciences
National Research Council
2101 Constitution Avenue
Washington 25, D. C.

G. W. H. SCHEPERS

56-57 Request: $14,000

55-56 Grant: $14,000

Yrs. Supported: 1

Anticipated Duration: indefinit

Applications Pending: none

(Leave Blank)

1. NAME AND ADDRESS OF INSTITUTION:

Saranac Laboratory
7 Church Street
Saranac Lake, New York

2. NAME, OFFICIAL POSITION AND ADDRESS OF RESPONSIBLE INVESTIGATOR:

G. W. H. Schepers, M.D., D.Sc., F.C.C.P.
Director, Saranac Laboratory and Trudeau-Saranac Institute
7 Church Street
Saranac Lake, New York

3. TITLE OF RESEARCH:

ENVIRONMENTAL CANCER OF THE LUNG: An investigation of the co-carcinogenic activity of inhaled asbestos dust in experimental beryllium neoplasia.

4. BUDGET FOR EXTENSION OF GRANT FOR ONE YEAR:

a.	Professional assistants (including Institution's contribution to annuity plan)	$ 4,000	
b.	Technical assistants (including Institution's contribution to annuity plan)	3,600	
c.	Equipment	250	
d.	Supplies	4,500	
e.	Travel	1,250	
f.	Contingent fund (not to include Institutional overhead)	350	
	Total	$12,950	1,943
	Institutional overhead desired (not to exceed ~~8%~~ 15% of total)	1,050	14,983
	Total	$14,000	

5. WHAT WAS THE UNEXPENDED BALANCE OF YOUR PREVIOUS GRANT AS OF LAST 30 JUNE?

Application approved by competent Executive Officer of Institution

G. W. H. Schepers, M.D., D.Sc.
(Name: Printed or Typed)

Signature G. W. H. Schepers
(Principal Investigator)

G. W. H. Schepers
(Signature)

Director, Saranac Laboratory
and Trudeau-Saranac Institute
(Official Title)

6/22/56 cc to Dr Trudeau Jr. HRB

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6. REQUIREMENTS FOR THIS INVESTIGATION:

A. PERSONNEL (PROFESSIONAL AND TECHNICAL ASSISTANTS WITH APPROXIMATE ANNUAL SALARIES, GIVING NAMES IF POSSIBLE).

		Brought forward (column 1)	$4000
G.W. H.Schepers,M.D.,D.Sc.,Director	$ 0	John Schmidt,Clinical Path.	0
T.M.Durkan,M.E., Chief Chemist	0	D.Bailey,Petrographer	0
O.Dobrogorski, M.D.,Pathologist	2000	O.Boula,Animal Caretaker	1200
L.Scheel, Ph.D., Biochemist	2000	T.Rooney, Technician	1200
M.Roberts, M.S., M.E.,Engineer	0	E.Gockeler, Photographer	0
S.Kaszer,M.E.,E.E.,Biostatistician	0	F.Creedon, Histologist	1200
A.Delahant,Biologist	0	J.Jacobsen, Dust Counts	0
		M.Moody, Mechanic	0
		Total	$7600

B. EQUIPMENT:

Wright dust feed device	250

C. SUPPLIES:

300 Rats and Maintenance	3500
4 Dust Chambers	400
General Laboratory Supplies	300
Photography and Radiography	300
Total	4500

7. SUPPORT FROM OTHER AGENCIES:

a. To what other sources have you applied for support of this project?

None

b. Has a duplicate of this application been submitted to any other agency, if so, where?

No

c. What grants (American Cancer Society and others) have you previously received for support of this work?

$14,000 for period July 1, 1955 to June 30, 1956

INCLUDE WITH THIS APPLICATION TWELVE REPRINTS EACH OF ANY PAPERS REPORTING ON THIS INVESTIGATION WHICH HAVE BEEN PUBLISHED SINCE YOUR LAST APPLICATION WAS SUBMITTED.

(Continuation page)

8. Number of Months Work Has Been in Progress:
Two months, namely, July and August 1955.

9. Summary of Results Thus Far Secured:
One new chamber has been constructed for beryllium dissemination and three previously existing chambers have been made ready.
One double chamber has been constructed for asbestos dissemination and two others are in the process of being made ready for use when due.
The beryllium compounds have been prepared and the disseminating apparatus has been purchased, adapted for use, and tried out.
There has been some delay in obtaining the correct grade of asbestos fiber. The Johns-Manville Corporation has taken a tremendous interest in our project and has undertaken to furnish a type of chrysotile fiber of proven pulmonary pathogenicity. A suitable shipment of dust has just been delivered and is being sieved and analyzed by our petrographer. A suitable asbestos dust dispersing mechanism is in the process of being devised and will be tried out within the next week or more. As soon as the apparatus functions satisfactorily the experimental animals will be introduced. They will be placed in the beryllium and asbestos dust chambers synchronously and changed about after six months residence in the dust. Photographs of the chambers are attached (page 3-a).

10. Plan for Continuation of Work:
The protocol of the experimental exposure will be as follows:

It is proposed to use 300 young white rats during the course of this study. Fifty animals in each of the six groups.

Group I. Asbestos (chrysotile) inhalation for six months followed by beryllium sulfate inhalation for six months; thereafter in normal air for the remainder of their lives.

Group II. Asbestos (chrysotile) inhalation for six months; thereafter in normal air for the remainder of their lives.

Group III. Normal air controls to Groups I and II. These rats to remain in normal air for the entire course of the study.

Group IV. Beryllium sulfate inhalation for six months followed by asbestos (chrysotile) inhalation for six months; thereafter in normal air for the remainder of their lives.

Group V. Beryllium sulfate inhalation for six months; thereafter in normal air for the remainder of their lives.

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10. (continued)

Group VI. Normal air controls to Groups IV and V. These rats to remain in normal air for the entire course of study.

Provisions will be made for the killing of animals at the conclusion of each exposure period, and at regular intervals thereafter, in order to follow the development of any tissue changes produced. It is anticipated that a sufficient number of animals will remain available for sacrificing during the 12-21 month period to provide indications of the degree of carcinogenic activity of the compounds or combination of compounds tested.

Four rats will be sacrificed from each group at 6, 12, 15, 18, and 21 months after beginning of exposures to the dusts. The tissues of two of these rats will be used for histological study and the remaining two for chemical analysis.

As the animals continue through their exposures they will be subjected to serial radiography in order to detect the earliest appearance of tumors. Concurrently with this the live animals will undergo appropriate serial biochemical studies. As they are sacrificed, their pulmonary tissues will be subjected to histological examination and histochemical and petrographic study, in order to determine the presence of neoplasia and the associated changes and to assay the levels of accumulated chemical substances and asbestos bodies. Parts of all tumors which appear will be transplanted to live rats by means of a technique already found successful and successful "takes" will again be subtransplanted.

11. Anticipated Duration of Work:

The inhalation phase of the study should be completed by September 30, 1956. Thereafter, the animals will be observed for a period of two years. Subtransplants of tumors may carry the study forward for yet a further year or more.

12. Nature of Institutional Collaboration in This Work:

(a) Funds and sources presently available to us for investigation in this same field.

Besides the money currently available under the A.E.C. grant, the Trudeau Foundation will pay the salaries of members of personnel listed under paragraph 6-A for whom no support is sought.

(b) Concise description of institutional facilities available for this investigation.

(1) Suitable dust chambers
(2) [illegible] house for breeding and housing our animals;
(3) An engineering unit to control accurately the levels of dust exposure, design new equipment, control hazards;
(4) A pathology unit for the histological study of animal organs;

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12. (continued)

(5) A radiology unit for serial examination of animals;
(6) A chemistry laboratory specially experienced and fully equipped to identify and quantitatively determine inorganic substances by chemical, petrographic, and X-ray diffraction methods;
(7) The archives of the laboratory house, the experimental records, tissue slides and preparations, representing seventy years of continuous research on tuberculosis, industrial disease, and lung cancer. In addition, there is a specialized library.

13. None.

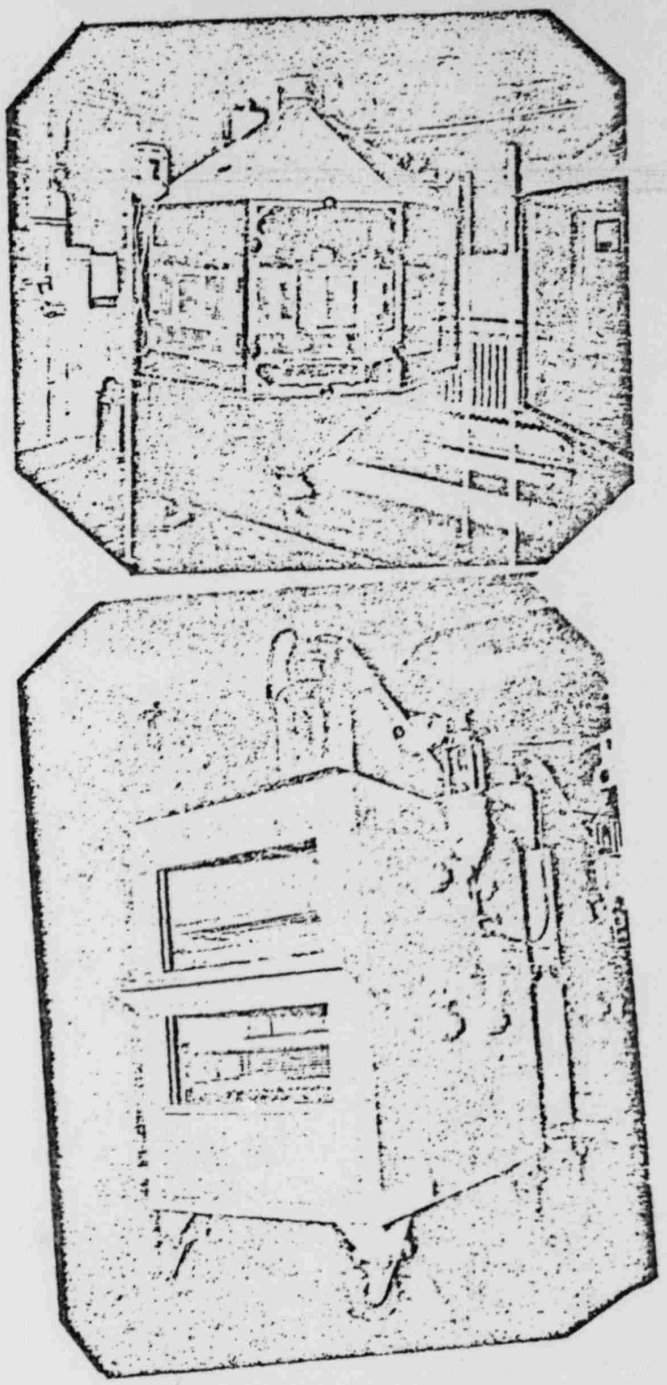
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