

ATOMIC ENERGY COMMISSION
APPLICATION FOR BYPRODUCT MATERIAL LICENSE

DUPLICATED
Form approved by
Budget Bureau No. 38-R027.3.
FOR DIV. OF INSP.

INSTRUCTIONS: Complete Items 1 through 19 if this is a new application. If renewal is requested, complete only Items 1 through 11 provided that with respect to the other items there has been no change in the information previously submitted. Mail two copies to: U. S. Atomic Energy Commission, P. O. Box E, Oak Ridge, Tennessee, Attention: Isotopes Extension, Division of Civilian Application. Upon approval of this application, the applicant will receive an AEC Byproduct Material License. General requirements for issuance of an AEC Byproduct Material License are contained in Title 10, Code of Federal Regulations, Part 30.

1. (a) NAME AND SHIPPING ADDRESS OF APPLICANT
(Institution, firm, hospital, person, etc.)
General Medical and Surgical Hospital,
Radioisotope Service, Veterans Administration Center
Los Angeles 25, California

(b) ADDRESS(ES) AT WHICH BYPRODUCT MATERIAL WILL BE USED
(If different from shipping address)
Same

2. DEPARTMENT TO USE BYPRODUCT MATERIAL
Chromatography Section

3. INDIVIDUAL USER (Name and title of individual(s) who will use or directly supervise use of byproduct material)
William Drell, Ph.D., Established Investigator, American Heart Association

4. RADIOLOGICAL SAFETY OFFICER (Name of person qualified in radiological safety, if other than individual user)
William H. Bland, M.D., Assistant Chief, Radioisotope Service

5. PREVIOUS LICENSE OR AUTHORIZATION NUMBER (If this is an application for renewal of a license for byproduct material obtained under a prior license or authorization for radioisotope procurement)
4-181-3

BYPRODUCT MATERIAL OR IRRADIATION SERVICE DESIRED

6. BYPRODUCT MATERIAL (Element and mass number) C ¹⁴	7. CHEMICAL AND/OR PHYSICAL FORM (Or catalog number) BaC ¹⁴ O ₃ and C ¹⁴ -tyrosine	8. MAXIMUM AMOUNT OF RADIOACTIVITY IN MILLICURIES THAT YOU WILL POSSESS AT ANY ONE TIME 350 millicuries
--	--	--

9. IF IRRADIATION SERVICE IS DESIRED, STATE PERTINENT DETAILS SUCH AS: CHEMICAL COMPOSITION AND WEIGHT IN GRAMS OF TARGET MATERIAL, RADIOACTIVITY, IRRADIATION TIME IN DAYS, AND NEUTRON FLUX

STATEMENT OF USE

10. (a) DESCRIBE PURPOSE FOR WHICH BYPRODUCT MATERIAL WILL BE USED. (If material is for "human use" complete Supplement A in lieu of this item. If material is to be used in or manufactured as a "sealed source" complete Supplement B in addition to this item.)
The BaC¹⁴O₃ will be converted into C¹⁴ glycine and postulated precursors of the sympathomimetic amines of high specific activity and their rate of conversion into sympathin in organs and tissues of various animals will be studied by adsorption, ion-exchange, and paper chromatography. A similar study will be carried out with tyrosine.

(b) DESCRIBE PROCEDURES WHICH WILL BE OBSERVED TO MINIMIZE HAZARD FROM HANDLING, STORAGE, AND DISPOSAL OF THE BYPRODUCT MATERIAL
See Items 16, 17, 18, and 19, License No. 4-181-2; and in addition disposal by burial in the soil, by dilution method with a stable isotope, and in public sewers.

CERTIFICATE

11. The applicant and any official executing this certificate on behalf of the applicant named in Item 1, certify that this application is prepared in conformity with Title 10, Code of Federal Regulations, Part 30, and do solemnly swear (or affirm) that all information contained herein, including any supplements attached hereto, is true and correct to the best of our knowledge and belief.

State of California
County of Los Angeles
Subscribed and sworn to before me this 24th
day of August, 1956

Veterans Administration
Applicant named in Item 1
By William H. Bland, Chief, Radioisotope Service
Title of Certifying Official

Notary Public [Signature]
My Commission Expires Sept. 21, 1957

Date AUG 24 1956

WARNING
18 U. S. C., Section 1001; Act of June 25, 1948; 62 Stat. 749; makes it a criminal offense to knowingly make a false representation to any department or agency of the United States as to any matter within its jurisdiction.
A. GRAHAM ROBERTS, JR.
Chief, Radioisotope Division
Atomic Medicine Section
Veterans Administration
Burial in Sewer

APPLICATION FOR BYPRODUCT MATERIAL LICENSE

INSTRUCTIONS: Complete Items 12 through 19 if this is a new application. This information may be omitted from subsequent applications provided there is no change in the information previously submitted, and reference is made in Item 5 to the application on which this information appears.

TRAINING AND EXPERIENCE WITH RADIOACTIVITY OF INDIVIDUAL USER NAMED IN ITEM 3

12. TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB (Circle answer)		FORMAL COURSE (Circle answer)	
			Yes	No	Yes	No
1. Principles and practices of radiological health safety.	See Application - License No. 39199					
2. Radioactivity measurement standardization and monitoring techniques and instruments						
3. Mathematics and calculations basic to the use and measurement of radioactivity.						
4. Biological effects of radiation.						
5. Actual use of radioisotopes in the types and quantities for which application is being made, or equivalent experience						

13. ISOTOPE HANDLING EXPERIENCE

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE

14. If Radiological Safety Officer named in Item 4 is different from individual user named in Item 3, use supplementary sheet to provide equivalent information on "Training and Experience With Radioactivity of Radiological Safety Officer." Supplementary sheet is attached (Circle answer) See previous application from this station Yes No

PHYSICAL FACILITIES, EQUIPMENT, AND RADIATION INSTRUMENTATION

15. RADIATION DETECTION INSTRUMENTS (Use separate sheet if necessary)

TYPE OF INSTRUMENTS (Include make and model number of each)	NUMBER AVAILABLE	RADIATION DETECTED	SENSITIVITY RANGE (mr/hr)	WINDOW THICKNESS (mg/cm ²)	USE (Monitoring, surveying, measuring)
See License No. 4-181-2					

16. FILM BADGES, DOSIMETERS, AND OTHER PERSONNEL MONITORING DEVICES INCLUDING BIO-ASSAY PROCEDURES

See License No. 4-181-2

17. METHOD, FREQUENCY, AND STANDARDS USED IN CALIBRATING INSTRUMENTS LISTED ABOVE (For film badges specify method of calibration and processing, or name supplier)

See License No. 4-181-2

18. (a) DESCRIBE BRIEFLY REMOTE HANDLING EQUIPMENT, STORAGE CONTAINERS, SHIELDING, AND LABORATORY FACILITIES (Working areas, fume hoods, etc.)

See License No. 4-181-2

(b) SKETCHES OF SUCH FACILITIES ARE ATTACHED (Circle answer)

Yes No

19. DESCRIBE BRIEFLY RADIATION SURVEYING PROCEDURES AND METHODS OF DISPOSING OF RADIOACTIVE WASTES

See License No. 4-181-2

88392

RADIOISOTOPE SHIPPING DOCUMENT
 OAK RIDGE NATIONAL LABORATORY
 OPERATED FOR U. S. ATOMIC ENERGY COMMISSION
 UNION CARBIDE NUCLEAR COMPANY

A DIVISION OF
 UNION CARBIDE AND CARBON CORPORATION
 OAK RIDGE, TENNESSEE

RADIOISOTOPE ORDER NO.
 1009-156

RAIL EXPRESS

10-3-56

CUSTOMER'S ORDER NO. LTR. 9-25-56	RADIOISOTOPE ORDER NO. 1009-156	APPROVAL NO. 4-181-3	SCHEDULED DATE 10-5-56
--------------------------------------	------------------------------------	-------------------------	---------------------------

SHIP TO DR. WILLIAM DRELL C/O VETERANS ADMINISTRATION CENTER RESEARCH SERVICE LOS ANGELES 25, CALIFORNIA	BILL TO (IF DIFFERENT FROM SHIP TO) CHECKS FOR \$1,110.00 SENT TO ACCOUNTING 9-28-56. ACCOUNT NO. 3361 IS TO BE BILLED FOR 80% OF THE TOTAL VALUATION EXCLUSIVE OF CONTAINER CHARGES. EM-57-213
--	---

ROUTE AND SHIPPING INSTRUCTIONS RAIL EXPRESS (DO NOT CONVERT BECAUSE U. OF CALIF. IS BUYING MATERIAL).	CONTAINER NO. RR
--	---------------------

BILLING INSTRUCTIONS	CUSTOMER CODE 980	SALE CODE 5 1
	CUSTOMER TYPE 6	MATERIAL TYPE 3651-51-20

DESCRIPTION OF MATERIAL ORDERED BATCH 341	SPECIFIC ACTIVITY REQUESTED	DATE SHIPPED 10-5-56	CONTAINER WEIGHT
--	-----------------------------	-------------------------	------------------

ORDERED	SHIPPED	DESCRIPTION	UNIT PRICE	EXTENSIONS	HANDLING CHARGE	CONTAINER CHARGE	TOTAL VALUATION
250 MCS	250 mc.	C 14 (P)	22.00 MC	5,500.00	10.00		5,510.00
CHEMICAL FORM	BATCH NO.	CONCENTRATION	VOLUME		SPECIFIC ACTIVITY		
CaCO₃	341	0.120 mc/ml	2.0834 ml		mc/g		

ANALYSIS
 Assayed at 8:00 A. M. 10-5-56
 PPT at pH 7 _____
 I 133 _____ %
~~Isotopic Ratio~~ **Isotopic Ratio 38.6**
 Heavy Metals _____ p.p.m.
 Total Solids _____ mg/ml
 Non Volatile Materials _____ mg/ml
 Normality _____
 Radiochemical Purity _____ %

Gross 7.6413
 Tare 5.5579
 Net 2.0834

APPROVED FOR SHIPMENT _____
 SIGNED _____
 RADIOISOTOPE SHIPPING DEPARTMENT RADIOISOTOPE SALES DEPARTMENT

AI

P. S.: Please bear in mind that your renewal application should be coordinated through the Office of:

**Mr. A. Graham Moseley, Jr.,
Department of Medicine and Surgery
Veterans Administration
Washington 25, D. C.**

OFFICE ▶						
SURNAME ▶						
DATE ▶						