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FEDERAL SECURITY AGENCY
PUBLIC HEALTH SERVICE

**SURVEY OF COMPOUNDS WHICH HAVE BEEN TESTED
FOR CARCINOGENIC ACTIVITY**

Second Edition

**PROPERTY OF
TECHNICAL DATA CENTER
OSHA, USDL**

By Jonathan L. Hartwell
National Cancer Institute
National Institutes of Health
Bethesda, Md.

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LIST OF ABBREVIATIONS

alk.--alkaline
 avg.--average
 b.u.--benzoate unit(s)
 ca.--circa
 carc.--carcinoma(s)
 castr.--castrate
 cc.--cubic centimeter(s)
 corr.--corrected
 C.P.--chemically pure
 d.--day(s)
 dec.--decomposes
 epi.--epithelioma(s)

F--female
 fig.--figure(s)
 gm.--gram(s)
 hr(s)---hour(s)
 i.b.u.--international
 benzoate unit(s)
 I.M.--intramuscular
 inj.--injection(s)
 I.P.--intraperitoneal
 I.T.--intratracheal
 I.U.--international units

I.V.--intravenous
 kg.--kilogram(s)
 l.--left
 M--male
 m.c.--microcurie(s)
 mg.--milligram(s)
 mm.--millimeter(s)
 mo(s)---month(s)
 m.u.--mouse unit(s)
 neg.--negative
 pap.--papilloma(s)

P.O.--per os
 r.--right
 R.I.--Rhode Island
 r.u.--rat unit(s)
 S.C.--subcutaneous
 sarc.--sarcoma(s)
 soln.--solution
 sq.--square
 unpub.--unpublished
 wk(s)---week(s)
 yr(s)---year(s)

TABULAR REVIEW

A single asterisk(*) after a reference signifies that a preliminary report on the compound has been given by Shear, 1938b. A double asterisk(**) means that a preliminary report has been given by Shear, 1939.

Descriptive medical terms used are generally the various authors' own, and no attempt has been made to modify them to conform to a consistent nomenclature. The same is true of chemical names, although certain exceptions have been noted in the Introduction.

It cannot be emphasized too strongly that this review is not the primary source for the material given. In many instances, the necessity for selecting the material from a publication to fit the rigid form of a table has resulted in much important information as well as discussion and conclusions being left behind. Many papers are hardly recognizable from their excerpts given in this review. Consequently, it is strongly urged that users of this review consult the original references before coming to conclusions based on data cited herein.

Reference	Animals	
Kinard and Ault, 1945	4 rats	
Nelson, et al., 1943	18 rats	
Fitzhugh, et al., 1944	54 rats	
Ambrose, 1943	25 rats	White
Hanzlik, and Presho, 1923b	2 pigeons	
Daels, 1923	Mice	
Askanazy, 1926	7 rats	
Schinz, and Uehlinger, 1942	1 rabbit	
Lipschütz, 1924	Mice	Gray
Raposo, 1928a	10 rabbits	
Raposo, 1928b	---do---	
Calvery, et al., 1938	Dogs	
Morris, H. J. and Wallace, 1938	Rats	Osborne Mendel

1. Equivalent to 0.5% metallic tungsten
2. 2 liver carcinomas and 1 adenomatoid hyp
3. Form not stated
4. 2 hepatic cell carcinomas; 1 adenomatoid

Reference	Animal	Strain or type	Sex	Preparation and dose	Site and route	Animals with tumors	Survival	Duration of experiment
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370.--m-TOLUIDINE (Continued)



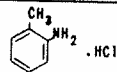
Ekman and Strömbeck, 1947	9 rats	---	---	---	P.O.	0 ¹	---	Ca. 94 days
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371.--o-TOLUIDINE



Stoerber, 1909	Rabbit	---	---	In olive oil	S.C. ear	0 ²	---	---
Morigami and Nisimura, 1940	15 rabbits	---	---	2% in olive oil, 1 cc. daily	S.C.	0 ³	High early mortality	16 mos.
	10 guinea pigs	---	---	2% in olive oil, 0.5 cc. daily	--do--	0	--do--	---
	Rats	---	---	0.5% in CHCl ₃ every 2 days	Skin	0 ³	--do--	---
Satani et al., 1941	5 rabbits	---	---	In olive oil or alcohol	S.C.	9 pap.	---	---
	8 guinea pigs	---	---	--do--	S.C.	--do--	---	---
	White rats	---	---	--do--	S.C.	--do--	---	---
	2 rabbits	---	---	--do--	S.C.	--do--	---	---
	2 rats	White	---	In ether	Bladder	1 pap.	---	---
Shear and Stewart, 1941	16 mice	Stock	---	5% in lard, 0.25 cc. repeated injection	Skin	2 pap.	---	---
	5 mice	A	---	--do--	S.C.	Pap. ^a	---	20 mos.
Yoshida et al., 1941a	Rats	White	---	Crystals in collodion	S.C.	--do--	---	--do--
Strömbeck, 1946	Rats	---	---	---	Bladder	Pap.	---	125 days
Ekman and Strömbeck, 1947	10 rats	---	---	---	P.O.	0 ⁵	---	100 days
Hartwell and Andervont, unpub. results	20 mice	C	F	10 mg. in olive oil, 8 injections	P.O.	0 ⁵	---	Ca. 91 days
					S.C.	0	---	15 mos.

372.--o-TOLUIDINE HYDROCHLORIDE



Hartwell and Andervont, unpub. results	11 mice	C	F	4 mg. in aq. soln. 13 injections	S.C.	0	---	12 mos.
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- 6 with some changes as in o-Toluidine
- Very toxic
- Bladder papillomas

- Of the ureter and kidney pelvis
- Epithelial changes in the mucous membrane of the bladder

Reference	Animal	Str.
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Stoerber, 1909	Rabbit	
Benthin, 1911	Rabbits	
Shear and Stewart, 1941	10 mice	Stock

Jaffé, 1920	3 mice	
	3 rats	
	3 rabbits	
Maruya, 1937	Rats	

Kinosita, 1936	Rats	White
Maruya, 1937	--do--	
Nagata, 1937	--do--	
Watanabe, 1937	41 mice	
	13 rats	
	10 mice	
Yoshida et al., 1941a	Rats	White

Yoshida et al., 1941a	Rats	White
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- A typical epithelial cell proliferation
- Specific isomer not stated
- Slight proliferation of the bile duct ep
- Malignant liver adenomas after 89 days; 80 days carcinomatous growths of the bil