

**INHIBITION STUDIES ON TISSUE CULTURES OF
WALKER CARCINOMA 256 AND CHICK EMBRYO HEART CELLS**

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Walker Carcinoma 256 cells were used in Carrel flask cultures. The medium was composed of:

Chick embryo extract (50%)	14%
Horse serum	33%
Earle's balanced salt solution	24%
Antibiotic solution	11%
Plasma	18%

This medium contained 100 units of penicillin and one microgram of streptomycin per ml. The results were based on measurements of increase in area of the cultures after 72 hours' incubation at 37° C.

Chick embryo heart cells were used in coverslip cultures. The medium consisted of:

Chick embryo extract	15%
Phenol red solution (.04%)	7%
Tyrode solution	28%
Chicken plasma	50%

Cultures were incubated for 72 hours at 37° C. The amount of inhibition of growth was determined from comparisons of the areas of growth and of the mitotic indexes.

Many of the compounds were synthesized in this Laboratory by Doctors Francis B. Cramer, Francis E. Reinhart, and H. A. Rutter. The source is indicated by the initials of the individual followed by (BRF).

The source of compounds obtained from commercial companies is indicated by the name of the company. We are indebted to the following companies and individuals for supplying us with gratuitous samples of some of the compounds:

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LDP	Dr. L. D. Parsons London, England
Upjohn	Drs. J. S. Evans, H. G. Petering Research Laboratories The Upjohn Company Kalamazoo, Michigan

TABLE 1
RESULTS WITH WALKER CARCINOMA 256 CELLS

ENTRY NO.	Name	C O M P O U N D		Source	Concentration In Medium	INHIBITION
		Empirical Formula				
10049	Acridine	C14 H14 Cl N3 . HCl		Coleman, Bell	1:100,000	Complete
10050	Acridone	C15 H23 N O4		Upjohn	1:2,000,000 1:4,000,000	Complete Slight
10051	5-(5-Cyano-2-pyridyl)thiuronium chloride	C7 H7 Cl N4 S		FER(BRF)	1:20,000 1:50,000	Complete None
10052	2,6-Dichloropyrimidine	C4 H2 Cl2 N2		HAR(BRF)	1:12,000 1:25,000	Complete None
10053	5-Nitro-2-(m-nitrophenylsulfonyl)pyridine	C11 H7 N3 O6 S		FER(BRF)	1:20,000 1:50,000	Complete None
10054	5-Nitro-2-(phenylsulfonyl)pyridine	C11 H8 N2 O4 S		FER(BRF)	1:50,000 1:100,000	Complete None
10055	5-Nitro-2,3'-sulfonyldipyridine	C10 H7 N3 O4 S		FER(BRF)	1:50,000 1:100,000	Complete None
10056	Podophylotoxin	C22 H22 O8		Merck	1:20,000	Complete
10057	Puromycin HCl	C22 H29 N7 O5 . 2HCl		Lederle	1:20,000 1:200,000	Complete None
10058	Streptothrycin	---		Upjohn	1:10,000 1:40,000	Complete None
10059	2,3'-Thiobis(5-aitropyridine)	C10 H6 N4 O4 S		FER(BRF)	1:200,000	Complete
10060	6-Mercaptonicotinonitrile	C6 H4 N2 S		FER(BRF)	1:20,000 1:50,000	Nearly Complete Slight
10061	5-Nitro-2-pyridinethiol	C5 H4 N2 O2 S		FER(BRF)	1:20,000	Slight
10062	5-(5-Nitro-2-pyridyl)thiuronium chloride	C6 H7 Cl N4 O2 S		FER(BRF)	1:20,000	Slight

TABLE 1 (cont'd)

ENTRY NO.	Name	Empirical Formula	Source	Concentration In Medium	INHIBITION
10063	N,N',N''-Triethylenemelamine	C9 H12 N6	Calco	1:20,000	Slight
10064	2-Aminobenzimidazole	C7 H7 N3	Fisher	1:8,000	None
10065	2,3-Anhydro- α -methyl-D-alloside <1,5>	C7 H12 O5	FER(BRF)	1:20,000	None
10066	2-Deoxy-L-arabinose benzylphenylhydrazone	C18 H22 N2 O3	FBC(BRF)	1:8,000	None
10067	3-Deoxy-4,6-benzylidene- α -methyl-D-glucoside <1,5>	C14 H18 O5	FER(BRF)	1:20,000	None
10068	Deoxycholic acid (Na salt)	C24 H40 O4 (Na)	Amend Drug	1:20,000	None
10069	2-Deoxyribose	C6 H12 O5	FER(BRF)	1:20,000	None
10070	Diformyl-deoxycholic acid	C26 H40 O6	Chemed, Inc.	1:20,000	None
10071	3,12-Diketocholanic acid	C24 H36 O4	Chemed, Inc.	1:20,000	None
10072	2,3'-Dithiobis(5-alktropyridine)	C10 H6 N4 O4 S2	FER(BRF)	1:50,000	None
10073	6,6'-Dithiodimicotinonitrile	C12 H6 N4 S2	FER(BRF)	1:100,000	None
10074	Ethyl 4-(3-pyridinesulfonamido)benzoate	C14 H14 N2 O4 S	FER(BRF)	1:20,000	None
10075	3-Formoxy-12-ketocholanic acid	C26 H38 O5	Chemed, Inc.	1:20,000	None
10076	Glucal triacetate	C12 H16 O7	FER(BRF)	1:20,000	None
10077	Methyl-2-bromo-2-deoxyhexoside I	C7 H13 Br O5	FER(BRF)	1:20,000	None
10078	Methyl deoxyholate	C26 H42 O4	Chemed, Inc.	1:20,000	None
10079	4-(3-Pyridinesulfonamido)benzoic acid	C12 H10 N2 O4 S	FER(BRF)	1:20,000	None
10080	3-Pyridinesulfonamide	C11 H10 N2 O2 S	FER(BRF)	1:20,000	None
10081	N-(3-Pyridyl)-3-pyridine sulfonamide	C10 H9 N3 O2 S	FER(BRF)	1:20,000	None

TABLE 1 (cont'd)

ENTRY NO.	Name	Empirical Formula	Source	Concentration In Medium	INHIBITION
10082	2,2'-Sulfonylbis(5-nitropyridine)	C ₁₀ H ₆ N ₄ O ₆ S	FER(BRF)	1:20,000	None
10083	2,4,6-Triaminopyrimidine	C ₄ H ₇ N ₅	Calco	1:25,000	None
10084	N,N',N''-Tris(2-hydroxyethyl)melamine	C ₉ H ₁₈ N ₆ O ₃	Calco	1:10,000	None
10085	Xanthane hydrate	C ₂ H ₂ N ₂ S ₃	HAR(BRF)	1:12,000	None

TABLE 2
RESULTS WITH CHICK EMBRYO HEART CELLS

ENTRY NO.	Name	Empirical Formula	Source	Concentration In Medium	INHIBITION
10086	2,6-Dichloropyrimidine	C4 H2 Cl2 N2	Dougherty	1:10,000	Complete
	"	"	"	1:50,000	Slight
	"	"	"	1:100,000	None
10087	4,6-Diamino-2-mercaptopyrimidine	C4 H6 N4 S	Dougherty	1:10,000	Slight
10088	4,6-Diamino-2-methylmercaptopyrimidine	C5 H8 N4 S	Dougherty	1:10,000	Slight
10089	4,6-Diamino-2-oxypyrimidine	C4 H6 N4 O	LDP	1:5,000	50%
10090	Dihydrothymine	C5 H8 N2 O2	Dougherty	1:10,000	Slight
10091	5-Amino-2-(phenylsulfonyl)pyridine	C11 H10 N2 O2 S	FER(BRF)	1:10,000	None
10092	Benzimidazole	C7 H6 N2	Eastman	1:20,000	None
10093	Disodium ethylenediamine tetraacetate	C10 H14 N2 Na2 O8	Alrose Chem.	1:10,000	None
10094	Glucose	C6 H10 O6	FEC(BRF)	1:3,300	None
10095	Isoglucosamine (monoacetate)	C6 H13 N O5 . C2 H4 O2	FEC(BRF)	1:2,500	None
10096	Kojic acid	C6 H6 O4	Bios Labs.	1:70,000	None
10097	5-Nitro-2,3'-sulfonyldipyridine	C10 H7 N3 O4 S	FER(BRF)	1:30,000	None
10098	Phloretin	C15 H14 O5	Bios Labs.	1:2,000	None
10099	Phlorizin	C21 H23 O9 . 2 H2 O	A.H.Thomas Co.	1:4,000	None
10100	Polygalitol	C6 H12 O6	FER(BRF)	1:3,300	None
10101	<i>p</i> -Thioglucozoline	C7 H11 N O5 S	HAR(BRF)	1:9,000	None
10102	2,4-Diamino-6-hydroxypyrimidine (sulfate)	C4 H6 N4 O . 1/2 H2 S O4 . 1/2H2O	Dougherty	1:1,000	Slight Stimulation
	"	"	"	1:2,000	"
	"	"	"	1:4,000	"