Some, but not all, of the C^{14} activity remaining in the medium may be recovered by further cell absorption or as C^{14}-nicotinic acid or amide by ether extraction at the proper *p*H.

It is felt that considerable advantage may be offered by this method as a means of obtaining small amounts of pure C^{14}-labeled DPN and TPN with rather high specific activities. No attempt has been made in this preliminary paper to discuss cell surface adsorption phenomena. A discussion of this problem is being prepared by Woodward and Boone (*8*).

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Influence of Vitamins upon Incidence of Tumors in tu^{50j} Stock of *D. melanogaster*

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In previous reports, I (*1, 2*) have shown that the penetrance of tumor ^{50j} in *Drosophila melanogaster* is influenced by nutrition. In general, poor nutrition apparently lowers the incidence of tumors in the tu^{50j} stock. Tannenbaum (*3*) and Herskowitz and Burdette (*4*) also have found that poor nutrition and low caloric intake reduces the incidence of tumors.

An excess of several amino acids in the diet (*2*) increased the incidence of tumor in the tu^{50j} stock. This report is concerned with the influence of excessive amounts of vitamins on *D. melanogaster* reared on a rigorously controlled diet (*5*). A vitamin-free and amino acid-free medium (*2*) was inoculated with the yeast *Hansenula anomala,* so that the nourishment of the larva was restricted to the yeast employed. Excessive amounts of various vitamins were added to this medium, and the incidence of tumors produced by a pair of flies in a 10-ml vial was recorded. As the larvae burrow into the medium, some of the vitamins present are taken into the digestive tract.

The influence of the vitamins upon the presence of tumors in tu^{50j} stock of *D. melanogaster* is presented in Table 1. Note that the incidence of tumors is 10.6 percent in the flies reared on the minimal diet. However, significant increases in the tumor production result if the flies are reared on an excessive amount of riboflavin, nicotinic acid, pyridoxine HCl, vitamin B_{12} and p-amino benzoic acid. These vitamins, with the exception of p-amino benzoic acid, are included by Hinton (*6*) in a chemically defined diet of *D. melanogaster.*

Table 1. Tumor incidence in *D. melanogaster* tu^{50j} reared on various mediums inoculated with *Hansenula anomala.*

Added to 1 lit minimal medium		Flies	
Additive	(g)	Total No.	Tumorous (%)
None		2051	10.6
Ascorbic acid	0.333	760	10.1
Riboflavin	1.000	1153	14.8
Nicotinic acid	0.333	732	14.0
Pyridoxine HCl	.333	763	14.1
Calcium pantothenate	.333	781	12.5
Biotin	.333	767	9.1
Inositol	.333	715	10.5
Cholesterol	.500	712	9.2
Ergosterol	1.000	752	9.9
Calciferol	0.500	764	9.5
Vitamin K	.666	700	9.3
Vitamin A	.010	754	9.2
Thiamine HCl	.333	830	9.2
Vitamin B_{12}	.000010	746	21.6
Folic acid	.166	785	10.2
Choline HCl	.166	786	10.3
p-Amino benzoic acid	0.166	777	16.2

It appears that specific vitamins, as well as certain amino acids, in the diet of tu^{50j} stock increase the production of tumors. Thus, the cornmeal-molasses mixture which contains a higher percentage of vitamins and amino acids (*2*) does increase the penetrance of tu^{50j}.

These results present interesting questions that cannot be answered at present: (i) How do vitamins influence tumor production? (ii) Why does an excess of vitamin B_{12} in the diet double the number of tumors in the stock? (iii) Is there a critical amount of nutritional factors in the diet necessary for tumor formation? However, it can be stated definitely that the better the nutrition, the greater the chance of exposing the larvae to nutritional factors that increase the tumor production in tu^{50j} stock of *D. melanogaster.*

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