

Table 1. 5-DEOXYCYTIDYLIC ACID-DEAMINATING ACTIVITY OF ADULT MAMMALIAN TISSUES

Human stomach	11.05 ± 0.75 μmole/10 mgm. N per 10 min.
" ileum	6.66 " " "
" colon	10.67 " " "
" sigmoid colon	4.43 " " "
" rectum	4.39 " " "
Rabbit stomach	1.57 " " "
" ileum	not detectable
" colon	not detectable
" testicle	not detectable
" bone marrow	scarcely detectable
Cat stomach	scarcely detectable
" ileum	not detectable
" colon	not detectable
Ox omasum	scarcely detectable

The failure to detect deoxycytidyllic acid-deaminase in some tissues, as in the case of the bone marrow and testicle, does not mean that the enzyme is completely absent. The enzyme might either have been destroyed during the extraction, or be present in too small a concentration to be detected with our assays.

Chromatographic analysis of the deproteinized incubation mixtures confirmed the formation of deoxyuridylic acid in agreement with the spectrophotometric results.

Further investigations, now in progress, indicate the presence of deoxycytidyllic acid-deaminase in human blood cells.

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Serotonin in Pineapple

SEVERAL investigators have noted and studied the presence of serotonin and its precursors in fruit, mainly banana and tomato¹⁻⁴. As well as aiding the study of serotonin itself, this has the purpose of warning against the possible misdiagnosis of malignant carcinoid tumours by analysis of urine for elevated 5-hydroxyindoleacetic acid-levels when these are spuriously high following a diet rich in serotonin or its precursors.

During work on urinary 5-hydroxyindoleacetic acid, I noted unusually high peaks of excretion following the ingestion of pineapple juice. A more systematic study was conducted to determine the serotonin content of canned and fresh pineapple juice. Three brands of canned pineapple juice were selected, and samples were taken directly from the cans after shaking well. The fresh fruit was peeled and the skin discarded. The rest was pulped in a vitamizer and stored at about -7° C. The pulp was centrifuged and the supernatant used for analysis. Analysis was by the colorimetric method of Udenfriend *et al.*⁵.

The three brands of canned juice contained 23 mgm. serotonin/l., 25 mgm. serotonin/l. and 25 mgm. serotonin/l. respectively and the fresh juice 12 mgm. serotonin/l. It is almost certain that serotonin exists in the free state in the fresh as well as in the canned juice. The smaller quantity in the fresh juice may be due both to the rather inefficient

pulping method used compared with commercial juice extraction and to the possibility that canned juice is concentrated somewhat in the processing.

A study of the urinary excretion of 5-hydroxyindoleacetic acid following ingestion of pineapple juice was also carried out. Two adult male subjects each drank 500 ml. of commercial canned pineapple juice and gave urine samples over the following 6 hr. The samples were analysed for 5-hydroxyindoleacetic acid by the colorimetric method of Udenfriend *et al.*⁶. The method was slightly modified at the final stage, the ethyl acetate being saturated with water at room temperature immediately before use. This ensured that the final volume of aqueous phase was the same, regardless of the atmospheric temperature. Table 1 shows the pattern of excretion.

Table 1	
Subject 1	μgm./min. 5-hydroxyindoleacetic acid
Time	1.8
7.15-10.30	Pineapple ingested
10.30-11.45	22.1
11.45-12.50	31.2
12.50- 2.15	13.0
2.15- 3.15	7.7
3.15- 4.45	5.9
Subject 2	3.0
7.45-10.30	Pineapple ingested
10.30-11.20	8.6
11.20-12.25	30.5
12.25- 1.30	17.7
1.30- 3.00	9.8
3.00- 4.40	3.7

The rate of excretion per hour over this period has increased by approximately ten times.

It would seem, therefore, that pineapple can be added to the list of forbidden fruit in a diet where 5-hydroxyindoleacetic acid analyses are being conducted and may also open another avenue to the study of serotonin.

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Nitrite Oxidation by Nitrobacter in the Presence of Certain Nitrophenols

It was reported by Simpson¹ that 2,4-dinitrophenol, at a concentration of 1 mM, strongly inhibits nitrite oxidation by *Nitrobacter*, although compounds such as ethyl nitrite and nitromethane appeared to have no inhibitory action. Other workers² have, however, failed to obtain any inhibition with 2,4-dinitrophenol. We have therefore re-investigated the effect of this compound on nitrite oxidation.

The oxidation of nitrite, at an initial concentration of 10 mM, by washed suspensions of *Nitrobacter* was followed manometrically at 30° in the absence of 2,4-dinitrophenol and in the presence of varying concentrations of the compound. All experiments were performed in the presence of 0.05 M phosphate buffer pH 7.5 and the solution of 2,4-dinitrophenol