

The Catabolism of Uracil in Rat Liver Slices

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Fink *et al.*¹ have clearly established the conversion of dihydrouracil to β -alanine *in vitro*. β -Ureidopropionic acid could be detected². Attempts to demonstrate the formation of dihydrouracil and β -alanine from uracil were unsuccessful.

We have now studied the catabolism of uracil in rat liver slices by means of labeled compounds^{3,4}.

One μ mole of uracil-4-¹⁴C, dihydrouracil-4-¹⁴C and β -alanine-1-¹⁴C, respectively, were incubated with rat liver slices. The incubation mixture was analysed by means of paper chromatography in different systems. The distribution of the activity on the paper strips was determined.

The data recorded in Table 1 together with data from β -alanine catabolism⁵ indicate the following pathway of uracil catabolism in the rat: uracil \rightarrow dihydrouracil \rightarrow β -ureidopropionic acid \rightarrow β -alanine \rightarrow acetic acid + CO₂.

The difficulty in detecting dihydrouracil and β -ureidopropionic acid as intermediates in the

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uracil catabolism, is probably due to the rapid conversion of dihydrouracil to β -alanine.

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Incorporation of ³²P into the Purine Ribonucleotides of *Tetrahymena pyriformis* in Heat-treated Cultures

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The incorporation of ³²P into synchronized cultures of *Tetrahymena pyriformis* has been investigated by a modification of the technique previously described¹. In each experiment 3 one liter cultures were simultaneously submitted to intermittent heat-treatment as described by Scherbaum and Zeuthen². 20 minute periods of incubation with isotope were used. 30—20 minutes before the beginning of the

Table 1. Amount of radioactive products after incubation of 1 μ mole of uracil — 4-¹⁴C, dihydrouracil-4-¹⁴C and β -alanine-1-¹⁴C, with rat liver slices. The results are expressed in per cent of the added activity.

Compound incubated	Time of incubation in hours	Radioactive compounds recovered after incubation (in per cent)				
		Uracil	Dihydro-uracil	β -Ureido-propionic acid	β -Alanine	¹⁴ CO ₂
Uracil-4- ¹⁴ C	0.5	87	4 ?	0	6	—
	2	75	3 ?	2 ?	14	6
Dihydro-uracil-4- ¹⁴ C	0.5	0	0	3 ?	94	—
	1	0	0	0	97	3
	2					6
β -alanine-1- ¹⁴ C	2					6