The Effect of Thiourea on Ureide Metabolism in *Neurospora crassa*

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Neurospora crassa Em5297a has been shown to be capable of growing on allantoin as sole nitrogen source as efficiently as on an inorganic nitrogen medium. Thiourea at 1 mg/10ml inhibits the growth of *N. crassa* strongly when allantoin is the nitrogen source; in contrast, a tenfold higher concentration of thiourea is needed for the same extent of inhibition on the inorganic nitrogen medium. Thiourea inhibition in allantoin medium is fully reversed by 100–500 µg of urea/10ml at all levels of inhibition; allantoin is also effective, but in the range 20–40 mg/10ml. Thiourea does not, however, interfere with allantoin uptake by preformed *N. crassa* mycelia.

In contrast, thiourea inhibition of *N. crassa* grown on inorganic nitrogen salts is not reversed by allantoin, nor by low concentrations of urea.

N. crassa has been shown to possess an active allantoinase that forms allantoic acid from allantoin, indicating the pathway of utilization:

The first enzyme herein, allantoinase, is not inhibited by thiourea. In view of the present findings, it is suggested that in *N. crassa* thiourea specifically inhibits *in vivo* the enzymic conversion of allantoic acid into urea.

Regulation of Serine Transfer Ribonucleic Acid during Oestrogen-Induced Synthesis of Phosvitin in Rooster Liver

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The yolk protein phosvitin is normally synthesized in the liver of laying hen and not in immature pullets or roosters. However, this synthesis can be induced in roosters by administration of oestrogen. Since phosvitin is unusually rich in serine (serine constitutes more than 50% of the amino acid residues) it was decided to test whether any change in the metabolism of serine tRNA is associated with this induction of phosvitin synthesis. On chromatographic fractionation no new species of serine tRNA can be detected in oestrogen-treated roosters. The serine tRNA of rooster liver can be fractionated into five peaks, and three of the five species increase quantitatively on oestrogen administration. The quantitative increase could be due to increased synthesis or decreased degradation of these species.

Results will be presented to show that the latter mechanism is probably operative in the regulation of serine tRNA. There is at least one nuclease involved in this regulation. On oestrogen administration this nuclease is modified, with a change in the specificity. Studies *in vitro* have revealed that the nuclease in the control enzyme preparation can inactivate 65% of the serine tRNA when tRNA obtained from control rooster liver is used as substrate. The nuclease in the enzyme preparation from oestrogen-treated roosters can inactivate 35% of the serine tRNA in the tRNA preparation from the same source, independent of the amount of enzyme used. The nuclease in the control enzyme preparation has the ability to inactivate not only those species inactivated by the nuclease in the enzyme preparation from oestrogen-treated roosters but additional species also. The results suggest that an alteration in the specificity of the nuclease is brought about on oestrogen administration.

Studies on Transfer Ribonucleic Acid in Developing Chick Embryo

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It has already been reported (Maya Sundari *et al.*, 1970) that the tRNA content of the developing chick embryo on a unit-weight basis is maximum at 13–15 days of development. This report concerns the amino acid-acceptor ability of the tRNA samples prepared from 11-, 15- and 21-day-old chick embryos.

The aminoacyl-tRNA synthetases were prepared from 11-, 15- and 21-day-old chick embryos by a modification of the method of Taylor *et al.* (1968). The tRNA samples were aminoacylated by using these enzyme preparations and ¹⁴C-labelled algal-protein hydrolysate, glycine, isoleucine or aspartic acid. The results show that the amino acid-accepting ability of the tRNA isolated from 15-day-old embryo was higher than that of the tRNA from 11- or 21-day-old embryos, irrespective of the three stages from which the enzyme preparation was taken.

Maya Sundari, R., Cherayil, J. D. & Jacob, T. M. (1970) *Abstr. Conv. Chem., Indian Institute of Technology, Madras*, p. 144

Taylor, M. W., Buck, C. A., Granger, G. A. & Holland, J. J. (1968) *J. Mol. Biol.* 33, 809