TABELLE I

AUSBEUTE UND WECHSELZAHL BEI DER REKRISTALLISATION

Das Enzym wurde in Glasröhrchen, die unten spitz zugehen, kristallisiert. Die einzelnen Chargen haben wir hierfür in möglichst kleinem Volumen 0.1 %-igem EDTA (pH etwa 7.5) gelöst, sodass etwa eine 2 bis 4 %-ige Enzymlösung entstand. Diese wurde wie bereits beschrieben mit $(NH_4)_2SO_4$ bis zur Kristallisation versetzt. Die Kristalle liessen sich bei etwa 3000 g abzentrifugieren.

	Ausbeute mg Protein	*Wechselzahl**
DEAE-Fraktionen	23 mg	1,640
1. Kristallisation	14 mg	2,000
2. Kristallisation	10 mg	1,980
3. Kristallisation	7 mg	2,070

$$* = \frac{\text{Mole Cortison/Min reduziert}}{10^5 \text{ g Enzym}}$$

Ultrazentrifuge prüfen. Auch wird die Molekulargewichtbestimmung erst endgültige Aussagen über die Wechselzahl zulassen.

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Countercurrent distribution of rat-liver, "soluble"-fraction ribonucleic acids

It has been reported[1] that the ribonucleic acids isolated from the soluble fraction of rat-liver homogenate can be fractionated by countercurrent distribution. These ribonucleic acids are of interest as acceptors of enzymically activated amino acids and are believed to take part in intermediate stages of protein synthesis. In this note we wish to report that countercurrent distribution for 250 transfers gives almost complete separation of the alanine-active ribonucleic acid from the tyrosine-active ribonucleic acid.

Starting with 60 mg of the rat-liver ribonucleic acid preparation, countercurrent distribution was carried out as previously described[1]. After 100 transfers, the contents of tubes 1–40 and 71–100 of the apparatus were emptied (removing approximately 40 % of the ultraviolet-absorbing material), and the empty tubes were refilled with fresh solvents. The apparatus was arranged to recycle, and the distribution was continued for 150 more transfers. As shown in Fig. 1, the material that remained in tubes 41–70 at the end of 100 transfers was spread over approximately 80 tubes.

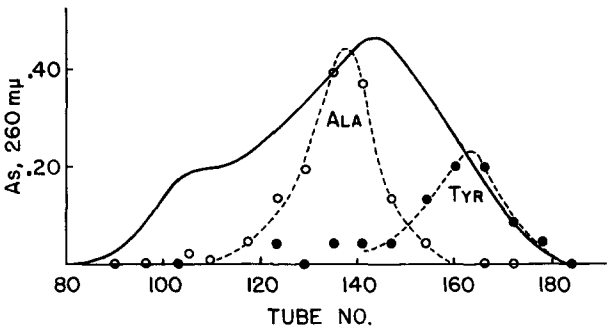

Fig. 1. 250-Transfer countercurrent disribution of rat-liver, "soluble"-fraction ribonucleic acid: ———, absorbance of fractions, measured in the Beckman DU spectrophotometer; —O—, activity for alanine; —●—, activity for tyrosine (acivities in arbitrary units).

The ribonucleic acids present in the fractions were reisolated by dialysis and lyophilization. Assays for amino acid-acceptor activity demonstrated that the peak of activity for alanine was separated by approximately 25 tubes from the peak of activity for tyrosine, with relatively little overlapping of the two activity curves (Fig. 1). (Alanine activity was determined by alanine-dependent adenosine monophosphate incorporation[2,3], and tyrosine activity by incorporation of tyrosine into the ribonucleic acid fractions[4]). However, the recovery of activity was low (approx. 40 %), due in part to the high pH of the solvent system. As a result, the increase in specific activities of the reisolated active fractions was only approximately 2-fold.

Experiments are underway to improve and extend these results.

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