TABLE I

RESULTS OF FILTER PAPER ELECTROPHORESIS OF RIBONUCLEASE DIGESTS UNDER THE CONDITIONS DESCRIBED IN THE TEXT

Component	*Charge*	*Distance of Migration**	*Qualitative Composition***
1	—	7.5	ala, asp, glu, gly, val
2	—	5.5	
3	—	3.5	ala, arg, asp, glu, gly, iso, lys, phe, tyr, val
4	—	1.3	
Neutral Complex	±	—0.5 to +2.5	
5	+	3.5	ala, arg, asp, gly, lys, met, phe, thr

* Measured in inches from the point of zero mobility.

** The abbreviations used for the amino acids are those of E. BRAND AND J. T. EDSALL, *Ann. Rev. Biochem.*, 16 (1947) 224.

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ADENINE AS A PRECURSOR OF ACID SOLUBLE NUCLEOTIDES IN THE RAT

by

DENIS H. MARRIAN

Department of Radiotherapeutics, University of Cambridge (England)

Adenine-8-^{14}C [1] (0.2 mMole/kg) has been given intraperitoneally to adult male rats. Two hours after injection, the livers and other internal organs (kidney, spleen, testis, and washed small intestine) were separately pooled, extracted with cold 7 % aqueous trichloracetic acid, and the ice-cooled extract freed from acid by continuous ether extraction. Following mercuric precipitation and treatment with hydrogen sulphide, the nucleotides were separated on Dowex 2 (formate) by an adaptation of the method of COHN AND CARTER[2], using formic acid/formate mixtures whose volatility simplified purification and counting of the adenosine phosphate fractions. Details of the specific activities of the various fractions are tabulated (Table I).

TABLE I

SPECIFIC ACTIVITY AND ANALYSIS OF ADENOSINE PHOSPHATE FRACTIONS FROM THE ACID SOLUBLE FRACTIONS OF RAT FOLLOWING I.P. INJECTION (0.2 mMole/kg) OF ADENINE-8-^{14}C ($9.90 \cdot 10^3$ cpm/μMole)

Substance	*Fract.*	*Ad.*	*Ribose*	*EHP*	*Tot. P*	*Spec. Activity cpm/μMole*
Liver						
Adenosine monophosphate	A	1	0.92	0	—	800
	B	1	1.2	0	—	890
Adenosine diphosphate	A	1	1.2	1.1	—	700
	B	1	1.3	0.92	—	750
Adenosine triphosphate	A	1	1.1	1.1	3.4	740
	B	1	1.0	1.2	3.1	600
Rest of Viscera						
Adenosine monophosphate	A	1	0.7	0	—	1250
	B	1	0.96	0	—	1140
	C	1	—	0	—	1330
Adenosine diphosphate	A	1	1.2	1.0	—	820
	B	1	1.1	0.90	—	720
	C	1	1.3	1.0	—	780
Adenosine triphosphate (very small amount isolated)	A	1	—	1.15	—	*ca.* 400

EHP = easily hydrolysable organic phosphorus
Tot. P = total organic phosphorus

The ready incorporation of labelled adenine into acid soluble nucleotides is in contrast to the poor utilisation for muscle ATP synthesis reported by BROWN *et al.*[3]

It should be noted that the adenosine triphosphate from rat liver (insufficient for full analysis was isolated from the rest of the viscera) contained adenine:ribose:easily hydrolysable phosphorus: total organic phosphorus in the ratios 1:1.05:1.15:3.25. It is possible that this material may be similar to that reported by GOLDWASSER[4] using cell-free pigeon homogenates, although the available abstract does not quote analytical figures.

During another 2 hour experiment on the same lines, the ribonucleic acid purines were also analysed, but only small amounts had been incorporated (Specific Activities of injected adenine: acid soluble adenine:ribonucleic acid adenine = 153:17:1). Similar results from perfused rabbit livers have been briefly reported[5].

Full details of these and other results are being prepared for publication.

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