106 (2338)

Some comparisons of rotatory power and reducing power of ultrafiltrates of blood plasma.

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Comparisons have been made of the rotatory power and copper reducing power of ultrafiltrates from normal beef and rabbit plasma. The technique of ultrafiltration was essentially that of Marshall and Vickers.[1] The filtrates, without further treatment, were observed in a Schmidt-Haensch triple field polariscope with scale graduated to 0.01 degree. The first readings were made within four or five hours after drawing the blood. The readings were repeated on succeeding days. The copper reducing power was determined by the method of Shaffer and Hartmann. The reducing power remained constant for several days. Bacterial action was prevented by addition of toluene.

The experiments are divided into three groups:

1. The plasma was filtered directly with no preliminary treatment.

2. The plasma was acidified with eight drops of glacial acetic acid per 100 cc. before filtration.

3. The plasma was partially precipitated with small volumes of 20 per cent sodium tungstate and 1.3 N sulfuric acid before filtration.

The results of a few typical experiments are shown in Table I. The sixth column of the table shows the rotation calculated from the reducing power assuming the specific rotation + 52.5°.

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[1] Marshall, E. K., and Vickers, J. L., *Bull. Johns Hopkins Hosp.*, 1923, xxxiv, 1.

TABLE I.

Sample (plasma)	Rotation				
	Observed (degrees)				Calculated (degrees)
	1st day	2nd day	3rd day	4th day	
Beef	0.10	0.11	0.12	0.11	0.11
Beef	0.10	0.08	0.08		0.10
Beef	0.15	0.15	0.16		0.16
Rabbit	0.13	0.13	0.14		0.14
Rabbit	0.12	0.13	0.12	0.12	0.16
Beef (acidified)	0.14	0.15	0.14		0.16
Beef (acidified)	0.11	0.10	0.11		0.12
Rabbit (acidified)	0.15	0.14	0.16		0.17
Beef: 35 cc. plasma, 5 cc. 20 per cent Na_2WoO_4, 5 cc. 1.3 N H_2SO_4	0.12	0.14	0.13		0.17
Rabbit: 25 cc. plasma, 3 cc. 20 per cent Na_2WoO_4, 3 cc. 1.3 N H_2SO_4	0.10	0.09	0.10		0.13

In no case have we observed any appreciable change from the initial rotation, and in general there has been substantial agreement between the observed and calculated rotations.

When we consider the extreme instability of gamma glucose,[2] it seems unlikely that its presence in normal blood can be detected by such experiments as these or by those of Winter and Smith.[3] The development of theories of carbohydrate metabolism based on ethylene oxide blood sugar would seem to be premature.

107 (2339)

Studies on the cholesterol and fatty acid content in the blood of normal and icteric infants.

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Cholesterol and fatty acid studies on blood were undertaken primarily to determine the relation of these substances, if any,

2 Irvine, J. C., Fyfe, A. W., and Hogg, T.P., *J. Chem. Soc.*, 1915, cvii, 524.
3 Winter, L. B., and Smith, B. A., *J. Physiol.*, 1922, lvii, 100.