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On the Action of Insulin on Glucose.

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An attempt was made to repeat the experiments of Lundsgaard and Holboll[1] in producing a new form of glucose by the action of insulin upon glucose in the presence of live tissue. The glass apparatus used was entirely of pyrex glass. For the incubation, an air thermostat was carefully controlled at 37° C. Twenty-five grams of finely cut muscle tissue of guinea pigs or rabbits were used with 25 and 50 units of Squibb's insulin, and 2 grams of Pfanstiehl glucose in 100 cc. of 0.9% NaCl. In a few cases, 0.001 grams adrenalin were added. Proper precautions to maintain sterile conditions were observed. The dialyses were made through clear collodion membranes which were one to two mm. thick. The degree of rotation of the dialysate was determined with a Schmidt and Haensch polarimeter, using light which was filtered through solutions of potassium dichromate and vanadium sulphate. The chemical analyses were made both by the Hagadorn-Jensen[2] method and the micro method of Benedict[3] as modified by Peters.[4] In no case was there a marked difference between the amounts of sugar determined by chemical and physical methods. What is more important, the degree of rotation of the dialysate was not found to have changed after these solutions had stood for 16 to 40 hours. The degree of rotation of the dialysate of samples of blood, presumably high in sugar content, was found to be too small and uncertain to deserve consideration.

This is a preliminary report.

[1] Lundsgaard, C., and Holboll, S. A., *J. Biol. Chem.*, 1925, lxii, 453.

[2] Hagadorn, H. C., Jensen, B. N., *Biochem. Zeit.*, 1923, cxxxv, 46.

[3] Benedict, S. R., *J. Biol. Chem.*, 1925, lxiv, 207.

[4] Peters, J. P., (private communication).