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Colloid Osmotic Pressure of Muscle.

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Measurements were made of the negative pressure necessary to prevent the passage of fluid across prepared cellophane membranes from blood serum into the cut surface of muscle. The membranes were conditioned with 95% alcohol and tested for their permeability to NaCl, glucose, and egg albumin. Membranes were used which would allow an equilibrium of non-colloids to be established between muscle and serum in 24 hours or less. A piece of the prepared membrane was cemented tightly across the mouth of a small glass osmometer with shellac and collodion. From 0.04 to 0.1 cc. of blood serum was introduced into the osmometer with a capillary pipette through the stopcock which was used to seal off the contents of the osmometer. Transverse sections of dog or cat muscle were tied tightly to the mouth of the osmometer so that the cut surface of the muscle entirely covered the surface of the membrane. The whole was enclosed in a glass chamber immersed in a regulated water bath.

In 6 measurements, negative pressures from 18 to 33 mm. Hg. were found necessary to prevent the passage of fluid from serum into muscle. The colloid osmotic pressures of the serums used in these experiments were also measured in the same apparatus, and ranged from 13 to 24 mm. Hg. Adding the colloid osmotic pressure of the serum vs. Ringer to the negative pressure measured with the serum vs. muscle, values were obtained ranging from 37 to 48 mm. Hg. The colloid osmotic pressure of the contents of muscle cells is believed to lie in this range. This pressure is probably not effective *in vivo,* being balanced by other forces such as intracellular turgor pressure.