

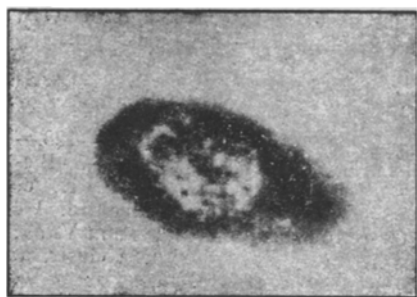
A NEW SELECTIVE METHOD OF STAINING MAST CELLS

M. G. Shubich

From the Department of Histology of the Kuban Medical Institute (Head — Docent G. F. Berezentseva)
and the Moscow Medical Stomatological Institute (Head — Prof. L. I. Falin)

(Received February 20, 1958. Presented by Active Member of the AMN SSSR V. N. Chernigovskii)

Because of the physiological importance of the mast cell and the consequent necessity of counting these cells in microscopic preparations and with the need to carry out further study of mast cells, some improvement in the histological methods used to detect them is desirable.



Mast cell in the subcutaneous connective tissue of a white mouse.
Stained by the method described above.
Magnification: objective 100 × immersion, ocular 10 ×.

We have devised a method of selective staining of the mast cell granules in sections and films. Any form of fixing is permissible which preserves mast cells (absolute alcohol, alcohol-formalin, Homgren's method with a 4% solution of basic lead acetate, Sylven's method with a mixture of equal volumes of an 8% solution of basic lead acetate and a 16% solution of formalin, and so on). The deparaffinized sections or fixed films are brought up to 70° alcohol and then placed in the dye solution for one hour. The stain solution is prepared by the formula: basic Bismarck brown 0.5 g, ethyl alcohol 80 ml, 1 N hydrochloric acid 20 ml.* The solution is best filtered before use. After removal from the stain, the preparation is passed through three changes of 70° alcohol with one minute in each, and then it is dehydrated, cleared and mounted in balsam. Results: selective, clear staining of the granules of mast cells of brown color, with separate granules clearly seen.

The structures of the other cells, including their nuclei, are not stained.

In a preparation stained by the method described it is particularly easy to count the mast cells since the other cells cannot be seen and do not hinder counting.

If it is desired to counterstain the preparation, after the 70° alcohol it is brought down to water and stained by the method of choice.

The method suggested is remarkably simple and does not require the use of differentiation.

SUMMARY

The author describes a method of selective staining of the mast cells granules with the aid of acidified basic Bismarck brown solution, prepared according to a special prescription (basic Bismarck brown 0.5 gm, ethyl

* Bismarck brown was used by Weigert [1] for staining nuclei, the basic substance of cartilage and mucus. The addition of a certain quantity of hydrochloric acid into our formula is important in principle for, by preventing staining of the nuclei, it provides selective staining of the mast cell granules.

alcohol 80 ml, 1 N hydrochloric acid 20 ml). The method is simple and does not require any differentiation.

LITERATURE CITED

- [1] B. Romeis, Microscopic Technique [Russian Translation], Izd. IL, Moscow (1953).