

The end product was a resinous substance. The ultra-violet absorption spectrum possesses the characteristics of an α , β -unsaturated ketone (λ -max = 238.5 μ ; ϵ = 16560). Though the substance is obviously pure as to its chemical structure, it is believed to

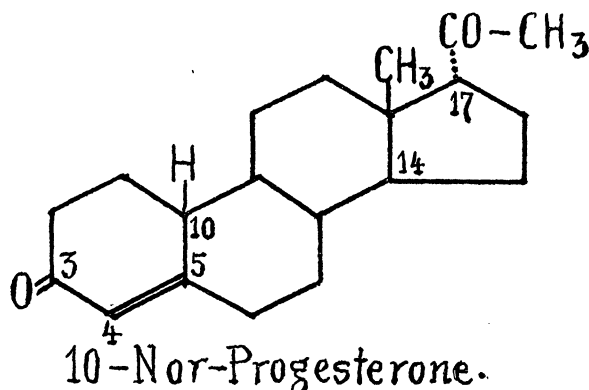


FIG. 1

represent a mixture of stereo-isomers. The extent to which carbon atoms 10, 14 and 17 may be involved in such stereo-isomerism is discussed elsewhere.¹

The activity of this compound was tested in castrated, sexually mature rabbits according to the method of Corner and Allen.² The rabbits were mated and castrated about 18 hours later. Care was taken not to traumatize the tubes in order that the

fertilized eggs might pass normally into the uterus. The first rabbit received a total of 4.1 mg over a period of five days and at autopsy six normal blastocysts were found in the uterus. The endometrium showed full proliferation. In view of this result a second rabbit was given a total of 0.83 mg, but in this experiment no blastocysts were found in the uterus. The endometrium, however, showed complete proliferation. The failure to find blastocysts does not, of course, indicate that the endometrium was abnormal since in many similar experiments with pure progesterone blastocysts are frequently not found.

This new compound appears to be fully as active as progesterone, perhaps even more so, since the minimum amount of progesterone which produces full proliferation in the sexually mature rabbit is about 1.0 mg. All other compounds related to progesterone which have progestational activity are considerably less active than progesterone. These results indicate that the angular methyl group at C₁₀ can be replaced with hydrogen without impairing the physiological activity.

WILLARD M. ALLEN

DEPARTMENT OF OBSTETRICS AND GYNECOLOGY,
WASHINGTON UNIVERSITY SCHOOL OF MEDICINE,
ST. LOUIS, MO.

MAXIMILIAN EHRENSTEIN³

GEORGE S. COX MEDICAL RESEARCH INSTITUTE,
UNIVERSITY OF PENNSYLVANIA

SCIENTIFIC APPARATUS AND LABORATORY METHODS

APPARATUS FOR THE USE OF SOLID CARBON DIOXIDE AS A SOURCE OF CO₂ GAS

THE following apparatus has proved very useful in supplying small quantities of sterile carbon dioxide under low pressure to be used in adjusting the pH of tissue culture media in small flasks. The quantities of carbon dioxide needed for such pH adjustments often do not warrant the procuring of a reducing valve, with an adapter to fit the smallest size cylinders, such as would be required to keep the pressure within usable limits.

A 750 ml suction flask was fitted with a one-hole rubber stopper and a short piece of glass tubing, bent at right angles, inserted into the stopper. To this was attached a short piece of rubber tubing, about 3 inches long, and a small Hoffman screw clamp. A short length of rubber tubing was attached to the side arm of the flask and connected to a glass T on one leg of a simple open-end U-tube mercury manometer. The manometer was calibrated from 0 to 3 pounds. A flask, filled with non-absorbent cotton and sterilized by

autoclaving, was connected to the other outlet of the T by a length of rubber tubing.

To use the apparatus, a few pieces of solid carbon dioxide, "dry ice," were placed in the flask, the stopper inserted and the Hoffman clamp tightened sufficiently to allow the pressure to build up to about one or one and one-half pounds. This pressure was maintained by tightening or loosening the screw clamp. Gas was allowed to evolve until all the atmospheric air had been displaced from the system.

With the apparatus now ready for use, the pressure could be controlled at will by means of the screw clamp. The apparatus safely maintained a pressure of 3 pounds for one-half hour. The rate of evolution of gas dropped off somewhat after about 10 minutes due to the cooling of the flask, but there was sufficient gas being evolved to keep the pressure at about one pound. This is usually ample for the needs considered in this paper.

WILLIAM P. JAMBOR

THE SQUIBB INSTITUTE FOR MEDICAL RESEARCH,
NEW BRUNSWICK, N. J.

² G. W. Corner and W. M. Allen, *Am. Jour. Physiol.*, 88: 326, 1929.

³ Aided by a grant from the Smith, Kline and French Laboratories in Philadelphia.