

Estrogen ^[1]

By: Van Iten, Brendan Keywords: Hormones ^[2]

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The figure depicts three different molecular structures of estrogen found in mammals that differ by the arrangement of bonds and side groups. The molecular structures of the three estrogen molecules differ by the arrangement of chemical bonds and side groups attached to the core steroid structure, cholesterol, which contains three cyclohexane rings and one cyclopentane ring. Compared to the molecular structure of estriol, the molecular structure of estradiol is missing one oxygen-hydrogen or OH group, and estrone lacks the OH group, and one hydrogen molecule that results in a double bonded oxygen atom. These steroid hormones bind to specific cell receptor molecules and induce transcriptional changes in cells. The production of estriol increases during pregnancy, estradiol production increases during stages of the menstrual cycle, and estrone levels increase during menopause. The differing bonds and chemical arrangements enable scientists to determine the different concentrations of the molecules.

Subject

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- The Embryo Project at Arizona State University, 1711 South Rural Road, Tempe
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