

# Porcine Pregnancy Test

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# Pregnancy Test

- ❑ Detects HCG (human chorionic gonadotropin) in urine
- ❑ The hormone binds to the antibodies on the test stick
- ❑ Also contains a control line

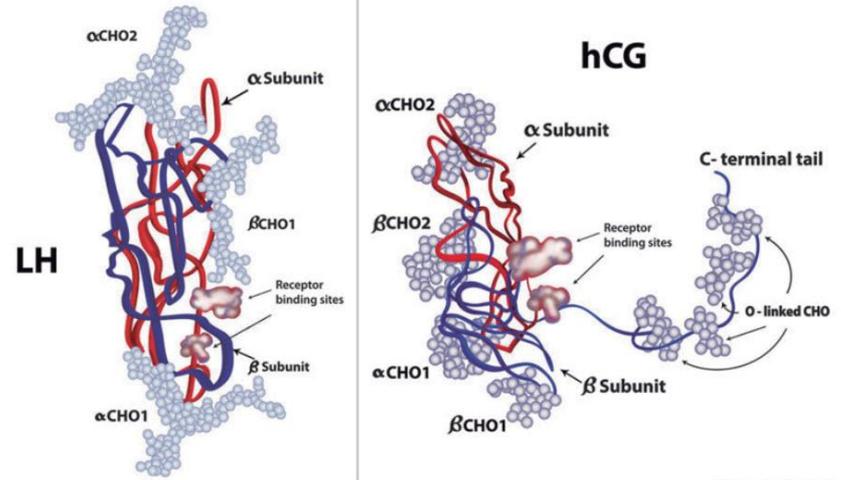


Photo Source-<https://hcg diet drops protocol.com/does-hcg-hormone-effect-fertility/>



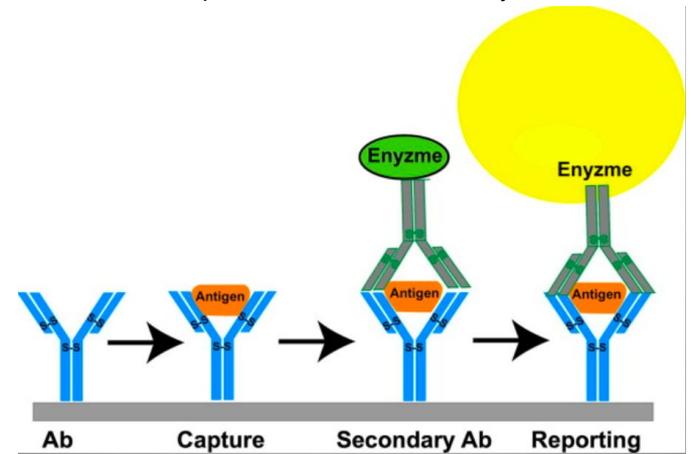
Photo Source-<https://blog.pregistry.com/positive-pregnancy-test/>

# ELISA Test

- ❑ Enzyme-linked Immunoassay
- ❑ Used to detect antibodies in the blood or urine
- ❑ Antibodies are produced by the body in response to antigens

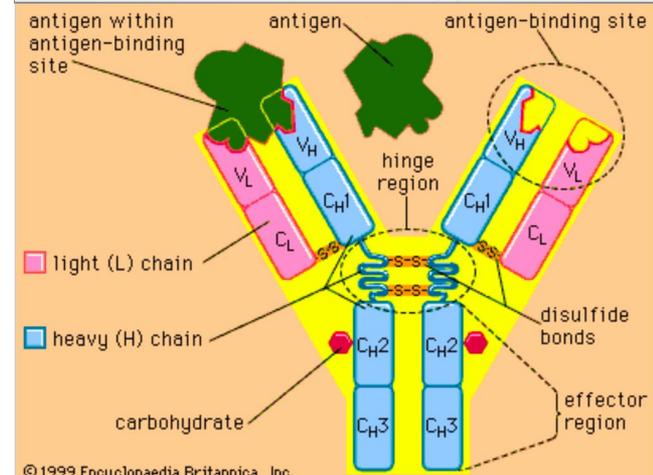
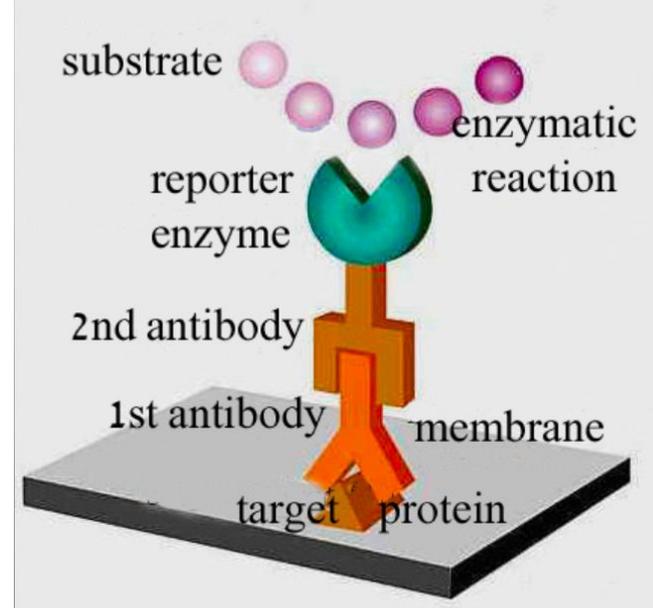


Photo Source-<https://www.medicalnewstoday.com>



# Antigens & Antibodies

- ❑ Antibodies are naturally occurring in animals
- ❑ They are produced in response to Antigens
- ❑ In an ELISA test the antibodies bind to the antigens that are on the test



# Dipstick Tests

- ❑ Commonly used to test for proteins, glucose, ketones, etc.
- ❑ Hormones indicative of pregnancy are detectable
- ❑ Indicates the concentration of proteins



# Hormones

- ❑ HCG is produced during the course of human pregnancy
- ❑ Cats and Dogs produce Relaxin
- ❑ Estrone Sulfate, Progesterone, Estradiol 17 beta, and PGE2 (Prostaglandin E2)

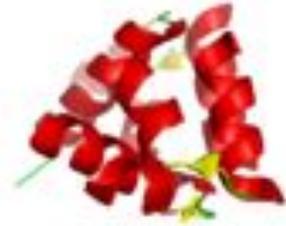
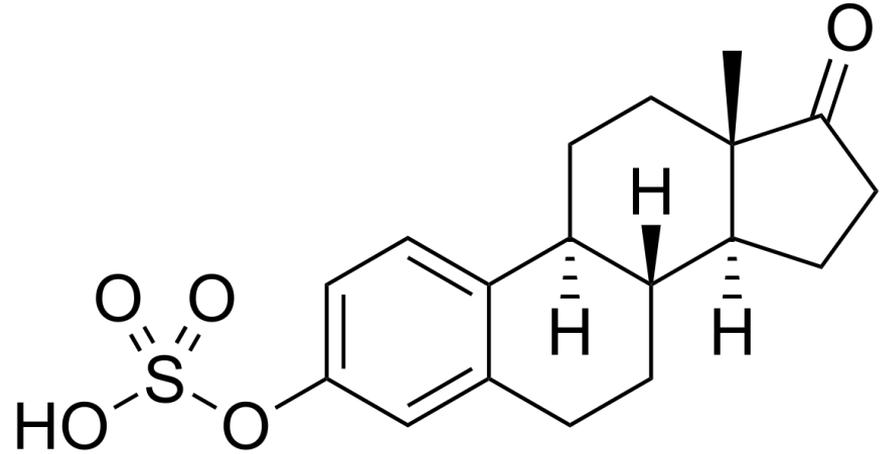


Photo Source-<https://en.wikipedia.org/wiki/Relaxin>

# Estrone Sulphate

- ❑ Produced within 24-29 days after mating
- ❑  $C_{18}H_{22}O_5S$
- ❑ Measured in plasma or urine
- ❑ Form of estrogen
- ❑ It is a natural steroid
- ❑ Provide information about fetus



Photo

Source-[https://en.wikipedia.org/wiki/Estrone\\_sulfate?scrllybrkr=85577d03](https://en.wikipedia.org/wiki/Estrone_sulfate?scrllybrkr=85577d03)

# Progesterone

- ❑ Necessary to prepare the uterus
- ❑ Supplies the lining of the womb with nutrients
- ❑  $C_{21}H_{30}O_2$

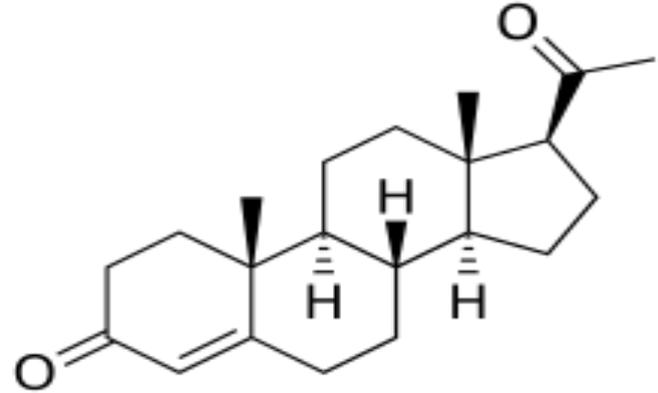


Photo  
Source-<https://en.wikipedia.org/wiki/Progesterone>

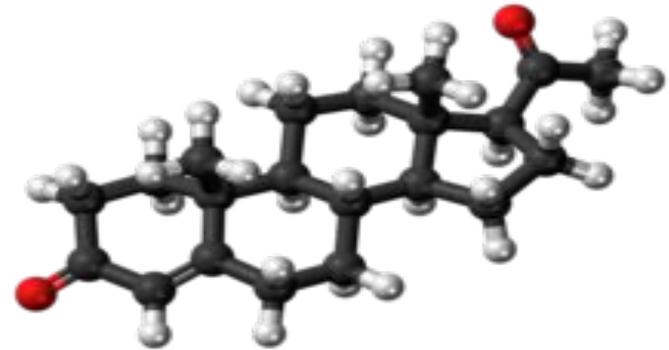


Photo  
Source-<https://en.wikipedia.org/wiki/Progesterone>

# Estradiol 17 $\beta$

- ❑ Synthesized from testosterone
- ❑ Ovarian cells and placenta
- ❑ Breast development
- ❑ Changes in body shape
- ❑ Important to maintain pregnancy
- ❑ C<sub>18</sub>H<sub>24</sub>O<sub>2</sub>

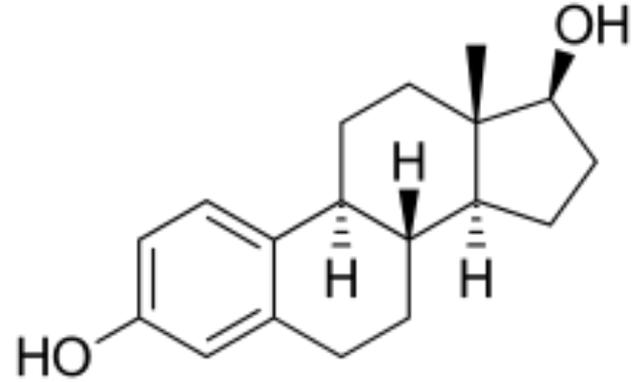
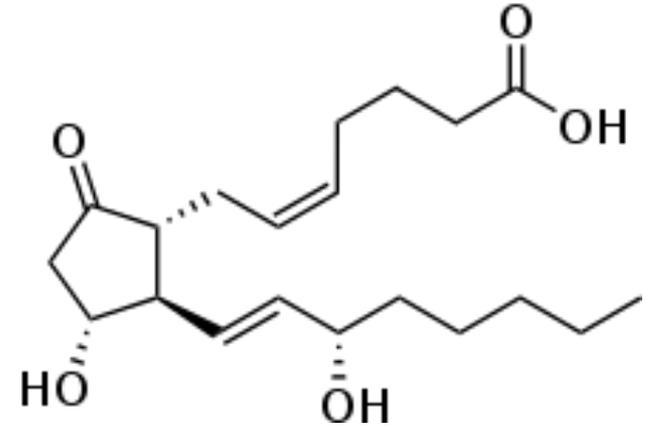


Photo Source-<https://en.wikipedia.org/wiki/Estradiol?sclrybrkr=85577d03>

# PGE<sub>2</sub>

- ❑ Prostaglandin E<sub>2</sub>
- ❑ Also known as dinoprostone
- ❑ Produced by the uterus
- ❑ First 12-14 days of pregnancy
- ❑ C<sub>20</sub>H<sub>32</sub>O<sub>5</sub>



Photos Source-[https://en.wikipedia.org/wiki/Prostaglandin\\_E2](https://en.wikipedia.org/wiki/Prostaglandin_E2)

# Our Plan

- ❑ Create a dipstick test that would detect the concentration of the four hormones listed above
- ❑ High concentrations of each hormone would be indication of a positive pregnancy



# Sources

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