Cortisol

**Chemical Formula**: $ C\_{21}H\_{30}O\_{5}$

**Molar Mass**: 362.46 g/mol

**Functional Group**: Ketone, Alcohol, and Alkene

**Description**: Cortisol is one type of steroid hormone that produce in the cortex of adrenal gland. (3) Stress can effect the level of cortical in the body. Activation of the pituitary-adrenal axis is a prominent neuroendocrine response to stress, promoting survival. (1)

**Function**: Cortisol have a different functions depend on which cell cortisol is acting on because most of the cell contains cortisol receptors.(2) Such as, controlling sugar levels in the blood, regulating [metabolism](http://www.yourhormones.info/glossary/metabolism.aspx), anti-inflammatory, influencing memory formation, controlling salt and water balance, influencing blood pressure, allow kidney to produce hypotonic urine and helping development of the fetus. (3)

**Physical and Chemical Properties**: (4)

|  |  |
| --- | --- |
| **State** | Solid |
| **Color** | White, crystalline powder |
| **Odor** | Odorless |
| **Taste** | Bitter |
| **Melting Point** | 220 °C |
| **Formal Charge**  | 0 |
| **Heavy atom count** | 27 |

**Structure**:

**References:**

1.Ranabir, S., & Reetu, K. (2011). Stress and hormones. Retrieved May 21, 2017, from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3079864/

2.Cortisol. (n.d.). Retrieved May 21, 2017, from http://www.yourhormones.info/Hormones/Cortisol.aspx

3.What is Cortisol. (n.d.). Retrieved May 21, 2017, from http://www.hormone.org/hormones-and-health/what-do-hormones-do/cortisol

4.Hydrocortisone. (n.d.). Retrieved May 21, 2017, from https://pubchem.ncbi.nlm.nih.gov/compound/hydrocortisone#section=Top

.