StressXpress®
# Corticosterone EIA Kit

**90** /100    **3 Citations**

Powered by Bioz          See more det

**StressMarq**
Biosciences INC.

Discovery through Partnership | Excellence through Quality

Colorimetric detection of corticosterone
Catalog No. SKT-205

## Product Name

Corticosterone EIA Kit

## Description

Colorimetric detection of corticosterone

## Species Reactivity

Species Independent

## Platform

Microplate

## Sample Types

EDTA Plasma, Heparin Plasma, Serum, Tissue Culture Media, Urine

## Detection Method

Colorimetric Assay

## Assay Type

Sandwich EIA (Enzyme Immunoassay)

## Utility

EIA kit used to measure the corticosterone present in samples.

## Sensitivity

24.7 pg/mL

## Assay Range

78.125 - 10,000 pg/ml

## Precision

Intra Assay Precision: Four human samples were diluted with Assay Buffer and run in replicates of 24 in an assay. The mean and precision of the calculated Corticosterone concentrations were: Sample 1- 322.5 pg/mL, 2.6% CV Sample 2- 564.3 pg/mL, 2.8% CV Sample 3- 630.3 pg/mL, 3.1% CV Inter Assay Precision: Three human samples were diluted with Assay Buffer and run in replicates of 24 in two assays. The mean and precision of the calculated Corticosterone concentrations were: Sample 1- 732.6 pg/mL, 1.6% CV Sample 2- 402.7 pg/mL, 0.5% CV Sample 3- 594.5 pg/mL, 0.2% CV

### Number Of Samples

39 samples in duplicate

### Other Resources

Kit Booklet Lot No. SC332123 , Kit Booklet Lot No. SC989258 , Kit Booklet Lot No. SC188662 , MSDS , Steroid Solid Extraction Protocol

### Field Of Use

Not for use in humans. Not for use in diagnostics or therapeutics. For in vitro research use only.

# Properties

### Storage Temperature

4°C and -20°C

### Shipping Temperature

Blue Ice

### Product Type

EIA Kits

### Assay Overview

The Corticosterone EIA kit is designed to quantitatively measure Corticosterone present in serum, plasma, urine, extracted dried fecal samples, and tissue culture media samples. This kit measures total corticosterone in serum and plasma and in extracted fecal samples. A corticosterone stock solution is provided to generate a standard curve for the assay and all samples should be read off the standard curve. We provide protocols on page 8 to prepare assay standards from 5,000 to 78.125 pg/mL or from 10,000 to 78.125 pg/mL. Please choose the standard range that fits your sample concentrations most appropriately. Standards or diluted samples are pipetted into a clear microtiter plate coated with an antibody to capture sheep antibodies. A corticosterone-peroxidase conjugate is added to the standards and samples in the wells. The binding reaction is initiated by the addition of a polyclonal antibody to corticosterone to each well. After an hour incubation the plate is washed and substrate is added. The substrate reacts with the bound corticosterone-peroxidase conjugate. After a short incubation, the reaction is stopped and the intensity of the generated color is detected in a microtiter plate reader capable of measuring 450nm wavelength. The concentration of the corticosterone in

the sample is calculated, after making suitable correction for the dilution of the sample, using software available with most plate readers.

## Kit Overview

| Component No. | Item | Quantity / Size |
| --- | --- | --- |
| SKC-205A | Coated Clear 96 Well Plates | 1 Each |
| SKC-205B | Corticosterone Standard | 125 µL |
| SKC-205C | StressXpress® Corticosterone Antibody | 3 mL |
| SKC-205D | StressXpress® Corticosterone: HRP Concentrate | 50 µL |
| SKC-205E | StressXpress® Corticosterone: HRP Diluent | 5 mL |
| SKC-205F | Assay Buffer | 50 mL |
| SKC-205G | Dissociation Reagent | 1 mL |

**SKC-205H**

Wash Buffer Concentrate

50 mL

**SKC-205I**

TMP Substrate

11 mL

**SKC-205J**

Stop Solution

5 mL

**SKT-205K**

Plate Sealer

1 Each

**Cite This Product**

Corticosterone EIA Kit (StressMarq Biosciences Inc., Victoria BC CANADA, Catalog # SKT-205)

# Biological Description

**Alternative Names**

(11β)-11,21-dihydroxypregn-4-ene-3,20-dione

**Research Areas**

Cancer, Cell Signaling, Neuroscience, Oxidative Stress

**Scientific Background**

Corticosterone ($C_{21}H_{30}O_4$) is a glucocorticoid hormone secreted by the adrenal cortex in response to ACTH stimulation. It is the primary stress hormone in rodents and a precursor to aldosterone. In neuroscience research, corticosterone is widely used to model chronic stress and its effects on brain function.
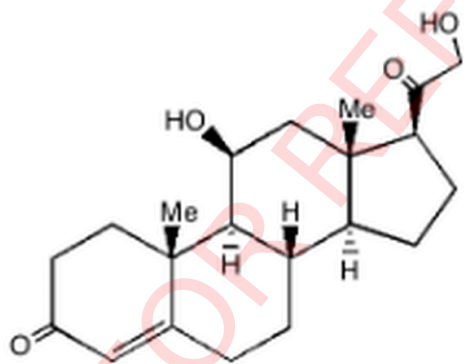
Elevated corticosterone levels have been shown to impair memory retrieval, alter sleep-wake cycles, and exacerbate neurodegenerative processes. In Parkinson's disease models, chronic corticosterone exposure increases alpha-synuclein phosphorylation and aggregation, particularly in the hypothalamus, and contributes to dopaminergic neuron loss.

These findings highlight corticosterone's role in stress-induced neurotoxicity and its relevance in studying the pathophysiology of neurodegenerative and psychiatric disorders.
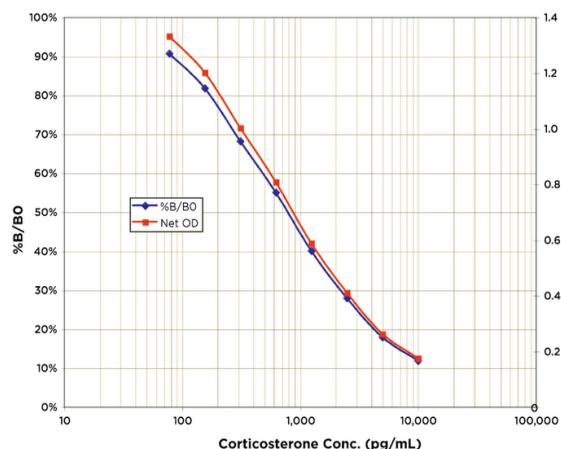
## References

1. Hupé, J. M., James, A. C., Payne, B. R., Lomber, S. G., Girard, P., & Bullier, J. (1998). Cortical feedback improves discrimination between figure and background by V1, V2, and V3 neurons. Nature, 394(6695), 784–787. DOI: 10.1038/29555

2. Kitaysky, A. S., Kitaiskaia, E. V., Wingfield, J. C., & Piatt, J. F. (2001). Dietary restrictions cause chronic elevation of corticosterone and enhance stress response in red-legged kittiwake chicks. Journal of Comparative Physiology B, 171(8), 701–709. DOI: 10.1007/s003600100230

3. Thellin, O., Noel, G., Khuana, S., Ogle, C. K., & Horseman, N. D. (2001). Stress hormone secretion and gut signal transducer (STAT) proteins after burn injury in rats. Shock, 16(5), 393–397. DOI: 10.1097/00024382-200116050-00001

4. Kramer, K. M., & Sothern, R. B. (2001). Circadian characteristics of corticosterone secretion in red-backed voles (Clethrionomys gapperi). Chronobiology International, 18(6), 933–945. DOI: 10.1081/CBI-100107542

5. Vazquez-Palacios, G., Retana-Márquez, S., Bonilla-Jaime, H., & Velázquez-Moctezuma, J. (2001). Further definition of the effect of corticosterone on the sleep-wake pattern in the male rat. Pharmacology, Biochemistry, and Behavior, 70(2–3), 305–310. DOI: 10.1016/S0091-3057(01)00629-8

6. Bimpos, N. M., Xie, Y., Gomez-Isla, T., Domenger, D., & Hyman, B. T. (2024). Alpha-synuclein-induced stress sensitivity renders the Parkinson's disease brain susceptible to neurodegeneration. Acta Neuropathologica Communications, 12, 100. DOI: 10.1186/s40478-024-01797-w.

7. Burtscher, J., Copin, J. C., Rodrigues, J., & Pernet, N. (2019). Chronic corticosterone aggravates behavioral and neuronal symptomatology in a mouse model of alpha-synuclein pathology. Neurobiology of Aging, 83, 11–20. DOI: 10.1016/j.neurobiolaging.2019.08.011
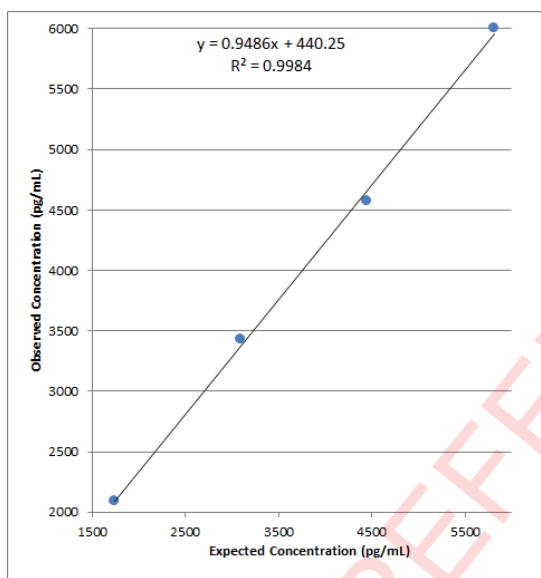
# Product Images



Chemical structure of Corticosterone

Typical Standard Curve for the Corticosterone EIA Kit (Enzyme Immunoassay) StressXpress® – SKT-205. Assay Type: Sandwich EIA. Detection Method: Colorimetric Assay. Assay Range: 78.125 – 10,000 pg/ml.



$$y = 0.9486x + 440.25$$
$$R^2 = 0.9984$$

Linearity was determined by taking two serum samples treated with Dissociation Reagent and diluted 1:50 with Assay Buffer, one with a low diluted corticosterone level of 104.6 pg/mL and one with a higher diluted level of 2,890.5 pg/mL, and mixing them in the ratios given below. The measured concentrations were compared to the expected values based on the ratios used.

# Reviews

Based on validation through cited publications.                    ★★★★★

**StressMarq Biosciences**

March 25, 2022:

## Product Citations

x

**90/100 Bioz Rating**    3  Citations

**Bioz AI Summary:** The **Corticosterone EIA Kit** from **StressMarq** has been consistently utilized across multip various biological samples,

Search term

Techniques ▼                          Journals ▼                          Dates ▼

- Search for Techniques
- 
- Enzyme-linked Immunosorbent Assay (ELISA)
  ☐
- Software (SOFT)
  ☐
- Concentration Assay (CO-A)
  ☐
- Microscopy (MICRO)
  ☐
- 

- Search for Journals
- 
- Acta Veterinaria Brno
  ☐
- Archives of toxicology
  ☐
- Foods
  ☐
- 

**Pregnant rats exposed to low-level methylmercury exhibit cerebellar synaptic and neuritic remodeling dur**
Masatake Fujimura, Fusako Usuki

Archives of toxicology  |  2021 Mar 08  |  32140736  |  Read Article   ☑  |  Bioz AI Brief ✦

"**Bioz AI Summary** In the study, the **Corticosterone EIA Kit** from **StressMarq** was utilized to measure plasma low-level methylmercury (MeHg). This measureme…" More...

**Increasing γ-Aminobutyric Acid Content in Vegetable Soybeans via High-Pressure Processing and Efficacy**
Sz-Jie Wu, Chia-Yu Chang, ..., Yuan-Tay Shyu

Foods  |  2020 Nov 16  |  33207592  |  Read Article ☑  |  Bioz AI Brief ✦

".. prevented from climbing on its own tail during the experiment.. The entire experiment was video recorded, an analyzed using the software. (e) Biochemical parameter analyses Corticosterone (CORT) was measured using the (**StressMarq Biosciences Inc**., Victoria, BC, Canada) according to the manufacturer's protocol.. Serotonin analy

control .." More...

ELISA 🏷    SOFT 🏷

**Evaluation of stress in laboratory rabbits used for teaching purposes**

Monika Urbanová, Eva Kramářová, ..., Martina Najmanová

Acta Veterinaria Brno  |  2019 Jan 01  |  Read Article 🔗  |  Bioz AI Brief ✦

".. in Eppendorf tubes and frozen at -80 °C, and later used for hormone analysis.. Corticosterone concentration w **commercial kit** (Corticosterone StressXpress EIA Kit **StressMarq Biosciences Inc**., Victoria, BC Canada).. Sen and detection limit was determined .." More...

SOFT 🏷    MICRO 🏷    ELISA 🏷    CO-A 🏷