**Corticosterone ELISA kit**

**ADI-901-097**
Highly sensitive corticosterone ELISA kit, species independent, used for animal stress research.

**Product Number/Sizes**
- **ADI-901-097** 5x96 wells
  - Alternative size available: **ADI-900-097** (1x96 wells)

- Sensitive measurement of Corticosterone, detecting as little as 27 pg/ml
- High throughput format with results in 3 hours for up to 39 samples
- Broad dynamic range
- Species independent
- Routinely used to monitor stress levels in zoo animals
- Save with bulk kit package!

The Corticosterone EIA kit is a colorimetric competitive enzyme immunoassay kit with results in 3 hours. Absorbance is read at 405 nm. The Corticosterone EIA kit has low cross-reactivity with related steroids. The broad dynamic range makes this kit ideal for a wide variety of sample matrices from any species.

**Product Details**

<table>
<thead>
<tr>
<th>Detail</th>
<th>Description</th>
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<tbody>
<tr>
<td>SENSITIVITY</td>
<td>27.0 pg/ml (range 32 - 20,000 pg/ml)</td>
</tr>
<tr>
<td>ASSAY TIME</td>
<td>3 hours</td>
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<tr>
<td>APPLICATIONS</td>
<td>ELISA, Colorimetric detection</td>
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<td>APPLICATION NOTES</td>
<td>For the quantitative determination of Corticosterone in culture supernatants, feces, plasma, serum, and saliva from any species. Cited sample types include cell lysate, urine and whole blood.</td>
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<tr>
<td>WAVELENGTH</td>
<td>405 nm</td>
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<td>SPECIES REACTIVITY</td>
<td>Species independent</td>
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<tr>
<td>CROSSREACTIVITY</td>
<td>Corticosterone (100%), Deoxycorticosterone (21.3%), Deoxycorticosterone (21.0%), Progesterone (0.46%), Testosterone (0.31%), Tetrahydrocorticosterone (0.28%), Aldosterone (0.18%), Cortisol (0.046%) and &lt;0.03%: Pregnenolone, Estradiol, Cortisone, 11-dehydrocorticosterone acetate</td>
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<tr>
<td>SHIPPING</td>
<td>Blue Ice Not Frozen</td>
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<tr>
<td>LONG TERM STORAGE</td>
<td>+4°C</td>
</tr>
<tr>
<td>CONTENTS</td>
<td>DxS Microliter plate, Conjugate, Antibody, Assay buffer 15 concentrate, Wash buffer concentrate, Standard, pNpp Substrate, Stop solution, Steroid displacement reagent</td>
</tr>
<tr>
<td>SCIENTIFIC BACKGROUND</td>
<td>Corticosterone is a glucocorticoid secreted by the cortex of the adrenal gland. Corticosterone is produced in response to the stimulation of the adrenal cortex by adrenocorticotropic hormone (ACTH) and is the precursor of aldosterone. Corticosterone production has been shown to increase with stress, with elevated corticosterone levels being associated with impairment of long term memory retrieval and following burn injury. In addition to stress levels, corticosterone is believed to play a decisive role in sleep-wake patterns.</td>
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<tr>
<td>TECHNICAL INFO/PRODUCT NOTES</td>
<td>Cited samples: Hormone ELISAs: Cited Samples Wildlife Endocrinology: Cited Sample Types</td>
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<tr>
<td>PROTOCOL</td>
<td>Suggested Small Volume Protocol for Serum/Plasma Samples</td>
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</table>

- Let all solutions come to room temp before use.
- Aliquot 10μl of each sample into microfuge tube.
- Make 1ml 1:100 Steroid Displacement Reagent (SDR) solution (immediately before use) in deionized water or PBS (not assay buffer)
- Add 10µl 1:100 SDR to each sample tube.
- Vortex, let stand >5 minutes before diluting with EIA buffer.
- Add 380µl EIA assay buffer to each plasma tube, vortex.

Final dilution is ~1:40 (This final dilution may not be appropriate for every sample; thus, optimal dilution must be determined by each end user for their experimental sample group.)

REGULATORY STATUS:
RUO - Research Use Only

Product Literature References
Anti-depressive-like and cognitive impairment alleviation effects of Gastrodia elata Blume water extract is related to gut microbiome remodeling in Apor-/- mice exposed to unpredictable chronic mild stress H.S. Huang, et al. J. Ethnopharmacol. 302 115872 (2023)
Effects of dietary protein levels on performance, nitrogen excretion, and odor emission of growing pullets and laying hens Y.J. Heo, et al. Poult. Sci. 102 102798 (2023)
Environmental signals perceived by the brain abate pro-metastatic monocytes by dampening glucocorticoids receptor signaling M.M. Canali, et al. Cancer Cell Int. 23 15 (2023)
Evaluation of an Extract Derived from the Seaweed Ascophyllum nodosum to Reduce the Negative Effects of Heat Stress on Broiler Growth and Stress Parameters G.S. Archer, et al. Animals 13 259 (2023)


Knockout of TSC2 in Nav1.8p neurons predisposes to the onset of normal weight obesity J.M. Brazill, et al. Mol. Metab. 68 101644 (2023)


Sex-dependent role of orexin deficiency in feeding behavior and affective state of mice following intermittent access to a Western diet - Implications for binge-like eating behavior N. Faesel, et al. Physiol. Behav. 260 114069 (2023)

Single-day and multi-day exposure to orogastric gavages does not affect intestinal barrier function in mice N. Hanning, et al. Am. J. Physiol. Gastrointest. Liver Physiol. 324 G281 (2023)

The resilience of adolescent male rats to acute stress-induced delayed anxiety is age-related and glucocorticoid release-dependent R.C. Cardoso, et al. Neuropharmacology 226 109385 (2023)

The role of sociability in social instability stress: Behavioral, neuroendocrine and monoaminergic effects A.D. Solinska, et al. Physiol. Behav. 270 114306 (2023)


Activation of the 5-HT7 receptor and MPP-9 signaling module in the hippocampal CA1 region is necessary for the development of depressive-like behavior M. Bijuata, et al. Cell Rep. 38 110532 (2022)


Anxiolytic-like Effects of the Positive GABAB Receptor Modulator GS39783 Correlate with Mice’s Individual Basal Anxiety and Stress Reactivity A.O. Bicakci, et al. Pharmaceuticals 15 233 (2022)


CGRP-dependent sensitization of PKC-α positive neurons in central amygdala mediates chronic migraine T.M. Chou, et al. J. Headache Pain 23 157 (2022)


Combined intermittent and sustained hypoxia is a novel and deleterious cardio-metabolic phenotype X. Zhen, et al. Sleep 45 zsab290 (2022)


Development of Anxiolytic and Depression-like Behavior in Mice Infected with Mycobacterium leprae


Differential effects of different diets on depressive-like phenotypes in C57BL/JJmsSLc mice E. Takahashi & E. Ono Physiol. Behav. 243 113623 (2022)


Distinct forms of regret linked to resilience versus susceptibility to stress are regulated by region-specific CREB function in mice R.D. de Cuttoli, et al. Sci. Adv. 8 eadd5579 (2022)


Effect of environmental enrichment on aggression and the expression of brain-derived neurotrophic factor transcript variants in group-housed male mice M.S. Aldshun, et al. Behav. Brain Res. 434 113966 (2022)


Feathers as an integrated measure of organohalogen contamination, its dietary sources and corticosterone in nestlings of a terrestrial bird of prey, the northern Goshawk (Accipiter gentilis) S.T. Randuff, et al. Sci. Total Environ. 828 154604 (2022)


Mercury toxicity risk and corticosterone levels across the breeding range of the Yellow-breasted Chat K. Mancuso, et al. Ecotoxicology 31 234 (2022)


Opposite effects of stress on effortful motivation in high and low anxiety are mediated by CRHR1 in the VTA I. Zaichorals, et al. Sci. Adv. 8 eabj9019 (2022)


Predator fear memory depends on glucocorticoid receptors and protein synthesis in the basolateral amygdala and ventral hippocampus F.M.C.V. Reis, et al. Psychoneuroendocrinology 141 105757 (2022)


Sex But Not Altitude, Modulates Phenotypic Covariations Between Growth and Physiological Traits in Adult Asiatic Toads P. Li, et al. Asian Herpetological Research 13 34 (2022)


Social Buffering is Dependent on Mutual Experience in Adolescent Male Mice Exposed to Social Defeat Stress L.F. Parise, et al. Chronic Stress 6 24705470221111094 (2022)

Stress during puberty exerts sex-specific effects on depressive-like behavior and monoamine neurotransmitters in adolescence and adulthood E.P. Harris, et al. Neurobiol. Aging 21 100494 (2022)

Stress-induced cardiometabolic perturbations, increased oxidative stress and ACE/ACE2 imbalance are improved by endurance training in rats V. Guzzoni, et al. Life Sci. 305 120758 (2022)


Tet3 Deletion in Adult Brain Neurons of Female Mice Results in Anxiety-like Behavior and Cognitive Impairments C. Antunes, et al. Mol. Neurobiol. 59 4892 (2022)


The intralimbic mineralocorticoid blockade prevents the stress-induced impairment of aversive memory extinction in rats K.A. Albernaz-Mariano & C. Demarchi Munhoz Transl. Psychiatry 12 343 (2022)

The same stress elicits different effects on anxiety-like behavior in rat models of Fmr1+/− and Pten−/− R. Dey, et al. Behav. Brain Res. 428 113892 (2022)


Adolescent Intermittent Ethanol (AIE) Produces Sex Specific Alterations in Adult Neuroimmune Gene Expression and Ethanol Sensitivity that are independent of Ethanol Metabolism A.S. Vore, et al. Neuropharmacology 195 108635 (2021)


Are individuals consistent? Endocrine reaction norms under different ecological challenges D. Baldan, et al. J. Exp. Biol. 244 jeb240499 (2021)


Developmental conditions have intergenerational effects on corticosterone levels in a passerine F. H. Kraft, et al. Horm. Behav. 134 105023 (2021)


Effect of extremely low frequency magnetic fields on oxidative balance in rat brains subjected to an experimental model of chronic unpredictable mild stress L.R. Quesnel-Galván, et al. BMC Neurosci. 22 52 (2021)


Impact of Successive Exertional Heat Injuries on Thermoregulatory and Systemic Inflammatory Responses in Mice A.R. Caldwell, et al. J. Appl. Physiol. 10 1152 (2021)
Infrared thermography is an effective, noninvasive measure of HPA activation J. Ouyang, et al. Stress 24 584 (2021)
Reduced sociability and social anxiety encoding in adult Shank3-mutant mice are restored through gene re-expression in real time D.K. Lee, et al. Nat. Neurosci. 24 1243 (2021)
Sperm microRNAs confer depression susceptibility to offspring Y. Wang, et al. Sci. Adv. 7 eabc7605 (2021)
Stress Controllability Modulates Basal Activity of Dopamine Neurons in the Substantia Nigra Compacta L. Yao, et al. eNeuro 8 44 (2021)
Corticosterone after acute stress prevents the delayed effects on the amygdala P. Chakraborty, et al. Neuropsychopharmacology 45 2139 (2020)
Mid-life microbiota crises: middle age is associated with pervasive neuroimmune alterations that are reversed by targeting the gut microbiome M. Boehme, et al. Mol. Psychiatry 25 2567 (2020)
Prebiotic administration modulates gut microbiota and faecal short-chain fatty acid concentrations but does not prevent chronic intermittent hypoxia-induced apnoea and hypertension in adult rats K.M. O’Connor, et al. EBioMedicine 59 102968 (2020)
Constitutive differences in glucocorticoid responsiveness are related to divergent spatial information processing abilities D. Huzard, et al. Stress 12 1 (2019)
Effects of high fat diet and chronic circadian challenge on glucocorticoid regulation in C57BL/6J mice H.S. Appiakannan, et al. Physiol. Behav. 204 100 (2019)


Involvement of hepatic SHP2 and PI3K/Akt signalling in the regulation of plasma insulin by Xiaoyaosen in chronic immobilization-stressed rats Q. Pan, et al. Molecules 24 480 (2019)


The glucocorticoid receptor in brown adipocytes is dispensable for the systemic control of energy homeostasis through brown adipose tissue C. Gliantschnig, et al. EMBO Rep. 20 e48552 (2019)


Wheel access has opposing effects on stress-related behaviors in the socially-enriched environment in female prairie voles (Microtus ochrogaster) M.R. Jarcho, et al. Stress 22 265 (2019)


Elevated temperatures are associated with stress in rooftop-nesting Common Nighthawk (Chordeiles minor) chicks G.N. Newberry, et al. Conserv. Physiol. 6 coy010 (2018)


Glucocorticoid measurement in plasma, urates, and feathers from California condors (Gymnogyps californianus) in response to a human-induced stressor Z.E. Glucs, et al. PlOS One 13 e0205565 (2018)


Orexin 2 receptor stimulation enhances resistance, while orexin 2 inhibition promotes susceptibility, to social stress, anxiety and depression C.D. Station, et al. Neuropharmacology 143 79 (2018)


Territorial aggression in urban and rural Song Sparrows is correlated with corticosterone, but not testosterone S. Davies, et al. Horm. Behav. 98 8 (2018)


An evaluation of feather corticosterone as a biomarker of fitness and an ecologically relevant stressor during breeding in the wild C. M. Harris, et al. Oecologia 183 987 (2017)


Antidepressant-like effects of YL-IPA08, a potent ligand for the translocator protein (18 kDa) in chronically stressed rats L.M. Zhang, et al. Neuropharmacology 113 567 (2017)


Control of Stress-induced Depressive Disorders by So-ochim-tang-gamibang, a Korean Herbal Medicine J.E. Choi, et al. J. Ethnopharmacol. 196 141 (2017)


Depressed Immune Responses and Accelerated Splanic Apoptosis due to Experience of Food Deprivation and Inequality but not Unstable Social Status in Bab/c Mice M. Aghajani, et al. Neuroimmunomodulation 24 200 (2017)


Perinatal programming of depressive-like behavior by inflammation in adult offspring mice whose mothers were fed polluted eels: Gender selective effects N. Soualeh, et al. Brain Behav. Immun. 36 137 (2017)


The protective effects of social bonding on behavioral and pituitary-adrenal axis reactivity to chronic mild stress in prairie voles N. McNeal, et al. Stress 20 175 (2017)


Assessing physiological and behavioural energetics as biomarkers of environmental change in seabirds G. Sorenson (2016)


Corticosterone may interact with peripubertal development to shape adult resistance to social defeat M.S. Latsko, et al. Horm. Behav. 82 38 (2016)


Environmental enrichment protects against stress-induced anxiety: Role of glucocorticoid receptor, ERK, and CREB signaling in the basolateral amygdala L.S. Novaes, et al. Neuropharmacology 113 457 (2016)


Expansion of bone marrow adipose tissue during caloric restriction is associated with increased glucocorticoids and not with hypothalamic W.P. Cawthorn, et al. Endocrinology 157 508 (2016)


Glucocorticoids mediate acute high-fat diet induction of neuroinflammatory priming, the NLRP3 inflammasome, and the danger signal HMGB1 J.L. Sobesky, et al. eNeuro. 3 113 (2016)


Hormone profiles of obligate avian brood parasites during the breeding season W.J. Jung, et al. IBIS 158 2 (2016)


Liver-derived ketone bodies are necessary for food anticipation R. Chavan, et al. Nat. Commun. 7 10580 (2016)


Neuroprotective, Neurotrophic and Anti-oxidative Role of Bacopa monnieri on CUS Induced Model of Depression in Rat S. Kumar, et al. Neurochem. Res. 41 3083 (2016)


NRSF and CCRS Established Neuron-glial Communication during Acute and Chronic Stresses H. Mou, et al. J. Drug Metab. Toxicol. 7 197 (2016)
Oxytocin promotes functional coupling between paraventricular nucleus and both sympathetic and parasympathetic cardio regulatory nuclei J.R. Yee, et al. Horm. Behav. 80 82 (2016)
Short environmental enrichment in adulthood reverses anxiety and basolateral amygdala hypertrophy induced by maternal separation A.S. Koe, et al. Transl. Psychiatry. 6 e729 (2016)
Temporal overlap and repeatability of feather corticosterone levels: practical considerations for use as a biomarker C.M. Harris, et al. Conserv. Physiol. 4 cow051 (2016)
Vibrissal paralysis produces increased corticosterone levels and impairment of spatial memory retrieval W.E. Patarroyo, et al. Behav Brain Res. 320 58 (2016)
Comparison of Two LED Light Bulbs to a Dimmable CFL and their Effects on Broiler Chicken Growth, Stress, and Fear J.C. Huth & G.S. Archer Poult. Sci. 94 2027 (2015)

Effects of developmental alcohol exposure vs. intubation stress on BDNF and TrkB expression in the hippocampus and frontal cortex of neonatal rats K. E. Bosch, et al., Int. J. Dev. Neurosci. 43 16 (2015)


In utero exposure of mice to diesel exhaust particles affects spatial learning and memory with reduced N-methyl-d-aspartate receptor expression in the hippocampus of male offspring S. Yokota, et al. Neurotoxicology 50 108 (2015)


Repeated exposure to stressful conditions can have beneficial effects on survival V. Marasco, et al. Exp. Gerontol. 69 170 (2015)


Social Isolation Disrupts Innate Immune Responses in both Male and Female Prairie Voles and Enhances Agonistic Behavior in Female Prairie Voles (Microtus ochrogaster) M.A. Scotti, et al. Horm. Behav. 70 7 (2015)


Chronic restraint stress decreases the repair potential from mesenchymal stem cells on liver injury by inhibiting TGF-β1 generation Y. Yang, et al. Cell Death Dis. 5 e1308 (2014)


Physiological costs and carry-over effects of avian interspecific brood parasitism influence reproductive tradeoffs M.M. Mark & D.R. Rubenstein Behav. Brain Res. 63 717 (2015)


Caprylic Triglyceride as a Novel Therapeutic Approach to Effectively Improve the Performance and Attenuate the Symptoms Due to the Motor Neuron Loss in ALS Disease W. Zhao, et al. PLoS One 7 e49191 (2012)


Periodic maternal separation decreases hippocampal neurogenesis without affecting basal corticosterone during the stress hyporesponsive period, but alters HPA axis and coping behavior in adulthood N. Lajud, et al. Psychoneuroendocrinology 37 410 (2012)


Early-life exposure to lipopolysaccharide reduces the severity of experimental autoimmune encephalomyelitis in adulthood and correlated with increased urine corticosterone and apopotic CD4 + T cells Z.W. Wang, et al. Neuroscience 193 283 (2011)


Post-operative Corticosterone Levels in Plasma and Femec of Mice Subjected to Permanent Catheterization and Automated Blood Sampling R. Sundbom, et al. in vivo 25 335 (2011)


Restrain stress and repeated corticotropin-releasing factor receptor activation in the amygdala both increase amyloid-beta precursor protein and amyloid-beta peptide but have divergent effects on brain-derived neurotrophic factor and pre-synaptic proteins in the prefrontal cortex of rats B. Ray, et al. Neuroscience 184 139 (2011)


Lack of adrenomedullin in the mouse brain results in behavioral changes, anxiety, and lower survival under stress conditions A. Martinez, et al. PNAS 105 12581 (2008)
MCP-1-deficient mice show reduced neuroinflammatory responses and increased peripheral inflammatory responses to peripheral endotoxin insult L. Van, et al. J. Neuroinflammation 5 U1 (2008)

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