

MOLECULAR SIGNATURE®
DNA Damage
(8-OHdG) ELISA
Kit

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Colorimetric detection of 8-hydroxy-2-deoxy
Guanosine
Catalog No. SKT-120

Product Name

DNA Damage (8-OHdG) ELISA Kit

Description

Colorimetric detection of 8-hydroxy-2-deoxy Guanosine

Species Reactivity

Species Independent

Platform

Microplate

Sample Types

Cell lysates, Plasma, Sample matrices, Urine

Detection Method

Colorimetric Assay

Assay Type

Competitive ELISA (Enzyme-linked Immunosorbent Assay)

Utility

ELISA Kit for 8-OHdG detection in samples.

Sensitivity

0.59 ng/mL

Assay Range

0.94 - 60 ng/mL

Precision

Intra-Assay Precision: Three samples of known concentration were assayed thirty times on one plate; the intra-assay coefficient of variation of the DNA Damage ELISA has been determined to be <5%. Inter-Assay Precision: Three samples of known concentration were assayed thirty times in three individual assays; the inter-assay coefficient of variation of the DNA Damage ELISA has been determined to be <5%.

Incubation Time

1 hour

Number Of Samples

39 samples in duplicate

Other Resources

Kit Booklet - Storage Conditions Updated May 2024 , MSDS , DNA Damage ELISA Kit Calculations Worksheet

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

ELISA Kits

Assay Overview

1. Prepare standard and samples in the Sample and Standard Diluent. 2. Add 50 µL of prepared standards and samples in triplicate to appropriate wells. 3. Add 50 µL of the diluted antibody preparation to the appropriate wells. 4. Cover plate with Plate Cover and incubate at room temperature (20-25°C) for 1 hour. 5. Wash plate 4 times with 1X Wash Buffer. 6. Add 100 µL of TMB Substrate to each well. 7. Cover plate and develop the plate in the dark at room temperature for 30 minutes. 8. Add 100 µL of Stop Solution to each well. 9. Measure absorbance on a plate reader at 450 nm. 10. Plot the standard curve and calculate sample concentrations.

Kit Overview

Component No.

Item**Quantity / Size****SKC-120A**

8-hydroxy-2-deoxy Guanosine : BSA Coated Plate

1 Plate

SKC-120C

8-hydroxy-2-deoxy Guanosine Standard

1 vial/ 100uL

SKC-120F

8-hydroxy-2-deoxy Guanosine HRP Conjugated Monoclonal Antibody

1 vial/75uL

SKC-0001

Sample and Standard Diluent

1 vial/50mL

SKC-0002

8-hydroxy-2-deoxy Guanosine Antibody Diluent

1 vial/13mL

SKC-0003

Wash Buffer Concentrate

1 vial/50mL

SKC-0004

TMB Substrate

1 vial/13mL

SKC-0005

Stop Solution

1 vial/13mL

SKC-0009

Plate Cover

2 covers

Cite This Product

DNA Damage (8-OHdG) ELISA Kit (StressMarq Biosciences, Canada, Cat # SKT-120)

Biological Description**Alternative Names**

8 hydroxyguanine, 8-OH-dG, 8-OHdG, 8OG, 8OHG, DNA Damage

Research Areas

Cancer, Cell Signaling, DNA Damage and Repair, DNA/RNA, Epigenetics and Nuclear Signaling, Oxidation, Oxidative Stress, Post-translational Modifications

Scientific Background

8-hydroxy-2'-deoxyguanosine (8-OHdG) is a widely recognized biomarker of oxidative DNA damage, formed when reactive oxygen and nitrogen species modify guanine bases. This hydroxylation process occurs during normal metabolism and is amplified by environmental stressors that increase oxidative load. Elevated levels of 8-OHdG are strongly associated with aging and a range of chronic conditions, including cancer, diabetes, hypertension, and neurodegenerative diseases.

In neuroscience, 8-OHdG serves as a critical indicator of oxidative stress in brain tissue, where neurons are particularly vulnerable due to high metabolic activity and lipid content. Increased 8-OHdG levels have been linked to the progression of Alzheimer's, Parkinson's, and other neurodegenerative disorders, making it a valuable tool for monitoring disease onset and therapeutic response.

8-OHdG can exist as a free nucleoside or be incorporated into DNA. In biological samples such as plasma, cell lysates, and tissues, its detection is complex; however, urine provides a more reliable matrix for measuring free 8-OHdG due to efficient renal filtration. Typical urinary concentrations range from 2.7–13 ng/mg creatinine, while plasma levels are significantly lower, often between 4–21 pg/mL as measured by LC-MS.

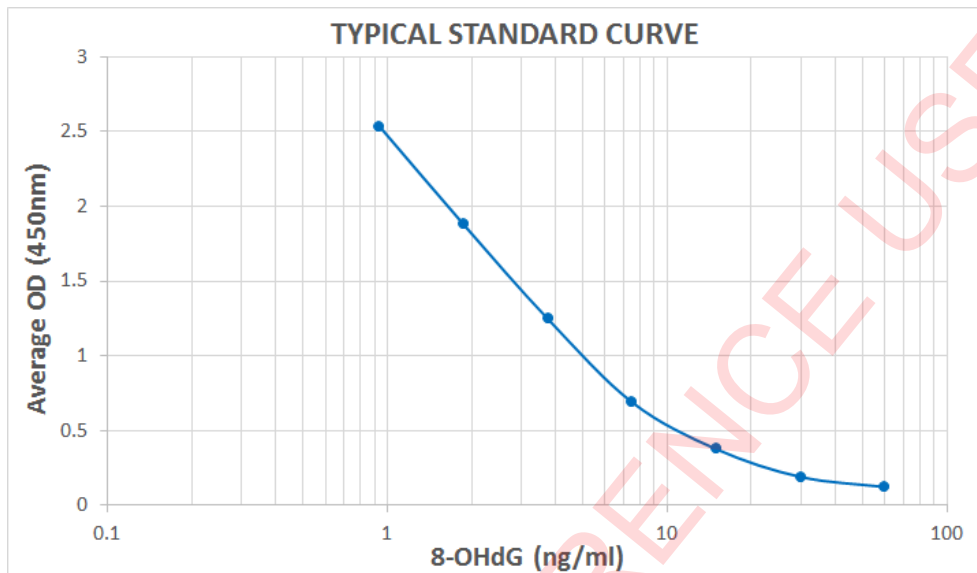
By tracking 8-OHdG levels, researchers gain insight into cellular oxidative damage, enabling early detection and evaluation of antioxidant-based interventions in neurodegenerative disease research.

References

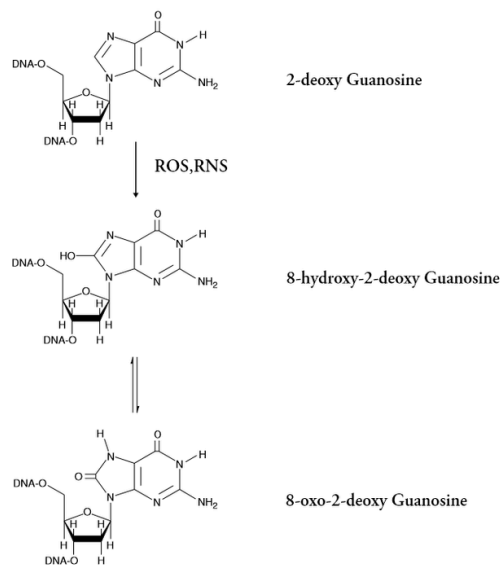
1. Maxey K.M., Maddipati K.R., Birkmeier J. (1992) J Clin Immunoassay 15: 116-120.
2. Pradelles P., Grassi J., Maclouf J. (1990) Methods Enzymol. 187: 24-34.
3. Maclouf J., Grassi J., Pradelles P. (1987) Dev Immunoassay Tech Meas eicosanoids.
4. Lin H., et al. (2004) Biochem J. 380: 541-548.

5. Bogdanov M.B., et al. (1999) Free Radic Biol Med. 27(5/6): 647-666.
6. Lee J., et al. (2005) Hypertension 45: 986-990.
7. Leinonen, J., et al. (1997) FEBSLett. 417: 150-152.
8. Endo K., et al. (2006) J. Atheroscler. Thromb. 13:68-75.
9. Kuo H., et al. (2007) Mutat Res. 631:62-68.
10. Shen J., et al. (2007) Cancer 109: 574-580.
11. Beckman K.B., Ames B.N. (1997) J Biol Chem 272: 19633-19636.
12. Epe B., et al. (1996) Nucleic Acids Res 24: 4105-4110.
13. Spencer J.P.E., et al. (1995) FEBS Lett 374: 233-236.
14. Floyd R.A. (1990) FASEB J 4: 2587-2597.

Product Images



Typical Standard Curve for the DNA Damage (8-OHdG) ELISA kit (Enzyme-Linked Immunosorbent Assay) StressXpress® – SKT-120. Assay Type: Competitive ELISA. Detection Method: Colorimetric Assay. Assay Range: 0.94 – 60 ng/ml.



Chemical Equation of the Oxidation of Guanosine

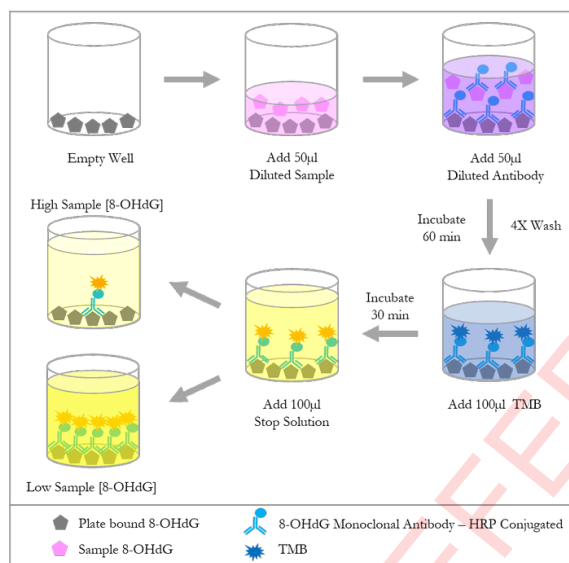
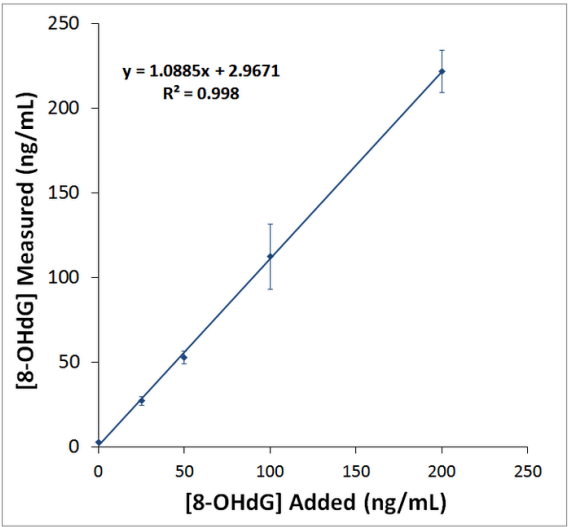


Diagram of the 8-OHdG Competitive ELISA



Urine Spike Assay

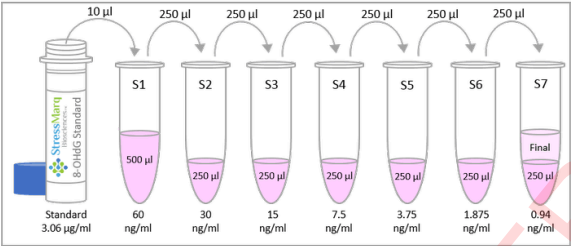


Diagram of the Preparation of the 8-OHdG Standards

Reviews

Based on validation through cited publications.



StressMarq Biosciences
January 17, 2017:

Product Citations

FOR REFERENCE USE ONLY

x

93/100 Bioz Rating

116 Citations

12 Images

- Export this page of citations
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Bioz AI Summary: The DNA Damage 8 OHdG ELISA Kit from StressMarq has emerged a

Search term

Techniques

Journals

Dates

- Search for Techniques
- Enzyme-linked Immunosorbent Assay (ELISA)
- Concentration Assay (CO-A)
- DNA Extraction (DNA-EX)
- Incubation (INCUB)
- Isolation (ISOLAT)

- Search for Journals
- PLoS ONE
- Antioxidants
- The Journal of experimental biology
- Antioxidants (Basel Switzerland)
- Diabetes
- Drug and chemical toxicology

Functional Genomics Studies of Psychiatric Disorders in Individuals of Latin American Populations: A Scoping Review

Luz M. Rodríguez, Isabelle Rodríguez-Lausell, ..., Paola Giusti-Rodríguez | Free radical research

American journal of medical genetics. Part... | 2025 Sep 27 | 41014243 | [Read Article](#) | [Bioz AI Brief](#)

Bioz AI Summary: In the study, DNA Damage 8 OHdG ELISA Kit from StressMarq was used to measure oxidized DNA damage in individuals with bipolar disorder type 1 (BD1). The kit enabled the detection of 8-OHdG levels in DNA extracted from whole blood cells. The study found that individuals with BD1 had significantly higher levels of 8-OHdG compared to healthy controls, suggesting increased oxidative stress and DNA damage in this population. The findings highlight the potential of the DNA Damage 8 OHdG ELISA Kit as a valuable tool for assessing oxidative stress and DNA damage in various clinical and research settings.

Biomarker Discovery

ACT-A

ELISA

MARK

- Cell Culture (CELL-CTR)

- Journal of Functional Foods
- Neural Regeneration Research
- Signal Transduction and Targeted Therapy

- Clinical Proteomics (Clinical Proteomics)

Cited 3 times

AZO attenuates oxidized self-DNA-mediated inflammation in acute kidney injury

- Competitive ELISA

Hanwen LI, Yongyao WU, ..., Bin Shao

Signal Transduction and Targeted Therapy | 2025 Apr 25 | 40280946 | [Read Article](#) | [Bioz AI Brief](#)

Article Snippet

".. 5 µg DNA using Lipofectamine 3000 (Thermo Fisher Scientific, Cat#L3000015) according to the instructions.. The 8OH-dG level in samples was detected by a DNA Damage 8OH-dG ELISA Kit (StressMarq Biosciences, AGAT#SKT-120). Oxidized dsDNA90 is used as a positive control. Oxidized dsDNA90 is used as a positive .." [More...](#)

Figure Legend

"... (SP*P) < 0.001. c Fluorescence microscopy of 8OH-dG (red) in kidneys of mice that were treated ..." [More...](#)

- Binding Assay

IRRAD (A)

TNSF

ELISA

DNA-EX

- Purification (PURI)

- Chromatography

Cited 2 times

Oxidized low-density lipoprotein potentiates angiotensin II-induced Gq activation through the AT1-LOX1

Jittoku Ihara, Yibin Huang, ..., Matthias Barton

eLife | 2025 Mar 25 | 40131218 | [Read Article](#) | [Bioz AI Brief](#)

".. concentrations Urine tests in mice included the measurement of urine 8-OHdG, creatinine, and albumin concentrations. (StressMarq Bioscience, Canada), Creatinine Kit L type Wako (Fujifilm, Japan), and Mouse Albumin ELISA Kit these measurements, following their respective instructions." [More...](#)

- Colorimetric Assay (COLOR-A)

- Control (CON)

- Flow Cytometry

Oxidized low-density lipoprotein potentiates angiotensin II-induced Gq activation through the AT1-LOX1 r

Jittoku Ihara, Yibin Huang, ..., Koichi Yamamoto

eLife | 2025 Mar 25 | [Read Article](#) | [Bioz AI Brief](#)

".. tests in mice included the measurement of urine 8- OHdG, creatinine, and albumin concentrations.. The DNA I Bioscience, Canada), Creatinine Kit L type Wako (Fujifilm, Japan), and Mouse Albumin ELISA Kit (Bethyl Labo measurements, following their respective instructions.. Plasma LOX-1 ligand concentration Measurement of LOX [More...](#) (SAL)

- Sandwich ELISA (ELISA-S)

Clinical Proteomics

ELISA

- Standard Deviation (SD)

Oxidative stress in the brain is regulated by social status in a highly social cichlid fish

Peter D (DBARS) Robert J. Fialkowski, ..., Ashley R. Harvey

Frontiers in Behavioral Neuroscience | 2024 Nov 26 | [Read Article](#) | [Bioz AI Brief](#)

- Agarose Gel Electrophoresis

Article Snippet

".. damage assay..Following digestion, samples were stored at -20°C until use in DNA damage assay.. DNA damage (8-OHdG) was measured with a **DNA damage ELISA kit (StressMarq Biosciences Inc., Victoria, BC, Canada)** following manufacturer's protocol.. We diluted each digested sample in sample and standard diluent to ensure samples were .."

Figure Legend

"... total antioxidant capacity, total glutathione (GSH), and oxidative DNA damage. We collected samples from 20 dominant" [More...](#)

- ☐ **ETHP**
- ☐ **ELISA**
- ☐ **MARK**
- ☐ **CO-A**

- Cureus
- Diabetologia
- Dose-response : a publication of International Hormesis Society
- Environment international

Oxidative stress in the brain is regulated by social status in a highly social cichlid fish

Peter D. Dijkstra, Robert J. Fialkowski, ..., Ashley R. Harvey

Frontiers in Behavioral Neuroscience | 2024 Nov 26 | [Read Article](#) | [Bioz AI Brief](#)

Article Snippet

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Table Legend

- ☐ **ETHP**
- ☐ **ELISA**
- ☐ **MARK**
- ☐ **CO-A**
- Expressing
 - Environmental science & technology
 - Environmental science and pollution research international
 - Ethology

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