



# SZABO SCANDIC

Part of Europa Biosite

## Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

Weitere Information auf den folgenden Seiten!  
See the following pages for more information!



### Lieferung & Zahlungsart

siehe unsere [Liefer- und Versandbedingungen](#)

### Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

### SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

[mail@szabo-scandic.com](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

StressXpress®

## DNA Damage (8-OHdG) ELISA Kit

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



Discovery through partnership | Excellence through quality

### Overview

---

#### 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, MSDS, Calculations Worksheet

## 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 Components

#### 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 Inc., Victoria BC CANADA, Catalog # SKT-120)

---

**Biological Description**

---

**Alternative Names**

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

---

**Research Areas**

---

Cancer, Cell Signaling, Oxidation, Oxidative Stress, Post-translational Modifications

---

**Scientific Background**

---

8-hydroxy-2-deoxy Guanosine (8-OH-dG) is produced by the oxidative damage of DNA by reactive oxygen and nitrogen species and serves as an established marker of oxidative stress (1-4). Hydroxylation of guanosine occurs in response to both normal metabolic processes and a variety of environmental factors (i.e., anything that increases reactive oxygen and nitrogen species). Increased levels of 8-OH-dG are associated with the aging process as well as with a number of pathological conditions including cancer, diabetes, and hypertension(5-9). In complex samples such as plasma, cell lysates, and tissues, 8-OH-dG can exist as either the free nucleoside or incorporated in DNA. Once the blood enters the kidney, free 8-OH-dG is readily filtered into the urine, while larger DNA fragments remain in the bloodstream. Because of the complexity of plasma samples, urine is a more suitable matrix for the measurement of free 8-OH-dG than plasma. Urinary levels of 8-OH-dG range between 2.7-13 ng/mg creatine, while plasma levels of free 8-OH-dG have been reported to be between 4-21 pg/ml as determined by LC-MS (10-11).

---

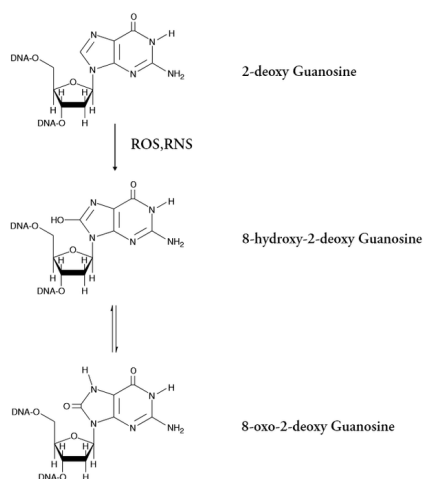
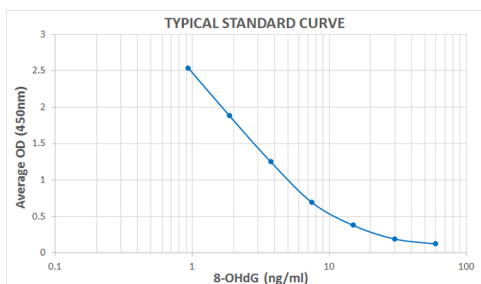
**References**

---

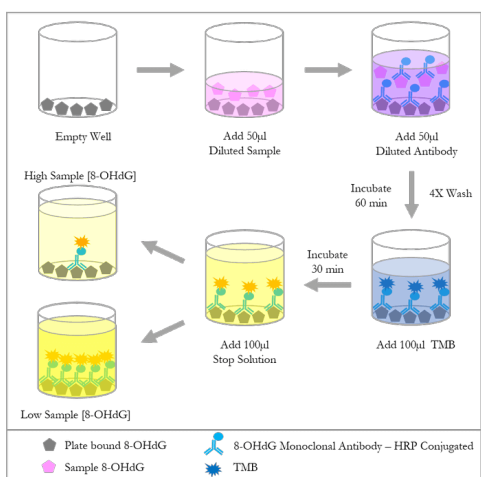
1. Maxey K.M., Maddipati K.R., Birkmeier J. (1992) J Clin Immunoassay 15: 16-120.
2. Pradelles P., Grassi J., Maclouf J. (1990) Methods Enzymol. 187: 24-34.
3. Maclouf J., Grassi J., Pradelles P. (1987) Dev Immunoassay Tech Meas eicosanoids.
4. Lin H., et al. (2004) Biochem J. 380: 541-548.
5. Bogdanov 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) FEBS Lett. 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



### Urine Spike Assay

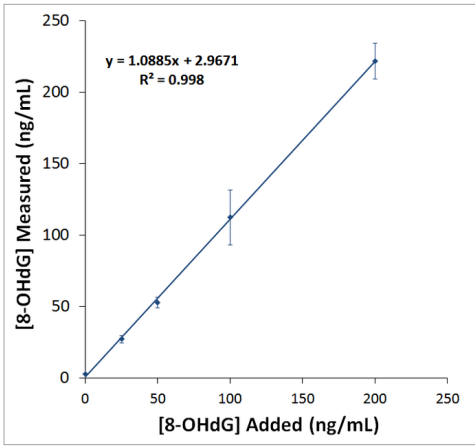


Diagram of the Preparation of the 8-OHdG Standards

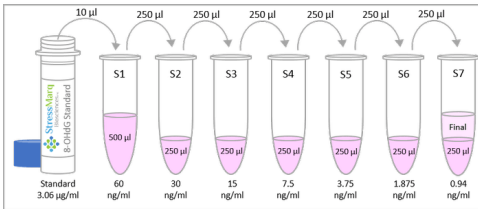


Diagram of the Triplicate Sample Plate Format

	1	2	3	4	5	6	7	8	9	10	11	12
A	S1	S1	S1	Blk	Blk	Blk	8	8	8	16	16	16
B	S2	S2	S2	1	1	1	9	9	9	17	17	17
C	S3	S3	S3	2	2	2	10	10	10	18	18	18
D	S4	S4	S4	3	3	3	11	11	11	19	19	19
E	S5	S5	S5	4	4	4	12	12	12	20	20	20
F	S6	S6	S6	5	5	5	13	13	13	21	21	21
G	S7	S7	S7	6	6	6	14	14	14	22	22	22
H	S8	S8	S8	7	7	7	15	15	15	23	23	23
S1 – S7: 60 to 0.94 ng/ml Standards				Blk: Blank								
S8: Zero Standard				1 – 23: Samples								

**DNA/RNA (8-OHdG) Damage ELISA Kit Worksheet**  
 Catalog No. **ST-120-0805-NKT-120-0805**  
 138-1537 Robinson Ave | Victoria BC V8T 2C1 CANADA  
 Tel: 250-396-9662 | Fax: 250-396-9622 | Email: info@stressmarq.com  
 www.stressmarq.com

**Blank**

For Duplicate	Well 1	Well 2	Well 3	Mean
Blank	OD <sub>450nm</sub>	OD <sub>450nm</sub>	OD <sub>450nm</sub>	OD <sub>450nm</sub>

**Control Curve**

Standard No.	8-OHdG (ng/ml)	Well 1	Well 2	Well 3	Mean	Calculated 8-OHdG (ng/ml)
1	10.00	OD <sub>450nm</sub>	OD <sub>450nm</sub>	OD <sub>450nm</sub>	OD <sub>450nm</sub>	
2	5.00	OD <sub>450nm</sub>	OD <sub>450nm</sub>	OD <sub>450nm</sub>	OD <sub>450nm</sub>	
3	2.50	OD <sub>450nm</sub>	OD <sub>450nm</sub>	OD <sub>450nm</sub>	OD <sub>450nm</sub>	
4	1.25	OD <sub>450nm</sub>	OD <sub>450nm</sub>	OD <sub>450nm</sub>	OD <sub>450nm</sub>	
5	0.625	OD <sub>450nm</sub>	OD <sub>450nm</sub>	OD <sub>450nm</sub>	OD <sub>450nm</sub>	
6	0.3125	OD <sub>450nm</sub>	OD <sub>450nm</sub>	OD <sub>450nm</sub>	OD <sub>450nm</sub>	
7	0.15625	OD <sub>450nm</sub>	OD <sub>450nm</sub>	OD <sub>450nm</sub>	OD <sub>450nm</sub>	

**STANDARD CURVE**

Equation:  $y = ax^2 + bx + c$

a	b	c	d	r <sup>2</sup>

## Product Citations (39)

### Other Citations

**Coagulin-I ameliorates TLR4 induced oxidative damage and immune response by regulating mitochondria and NOX-derived ROS.**

Reddy, SS (2016) Toxicol Appl Pharmacol. [Epub ahead of print].

PubMed ID: 27568862    Reactivity: Mouse

**Preventive Effect of Resveratrol against Brain Mitochondria DNA Damage, Lipid Peroxidation, Inflammation and Seizures Induced by Kainic Acid in Mice.**

Hussein, S. A., Abdel-mageid, A.D., Abd-Elhamed, O. M., Amin, A. and Al harthy, H.S. (2016) Int J Phar Sci. 6(4): 1634-1646

PubMed ID:    Reactivity: Mouse

**Neuroprotective Effect of Curcumin on Kainic Acid Model of Epilepsy in Male Swiss Albino Mice.**

Hussein, S. A., Abdel-mageid, A.D., Abd-Elhamed, O. M., Amin, A. and Al harthy, H.S. (2016) Int J Chem Nat Sci. 4(4): 447-460.

PubMed ID:    Reactivity: Mouse

**DNA damage and the activation of the p53 pathway mediate alterations in metabolic and secretory functions of adipocytes.**

Vergoni, B. et al. (2016) Diabetes.

PubMed ID: 27388216    Reactivity: Human

**Discovering biomarkers for antidepressant response: protocol from the Canadian biomarker integration network in depression (CAN-BIND) and clinical characteristics of the first patient cohort.**

Lam, R.W. et al. (2016) BMC Psychiatry. 16(1):105.

PubMed ID: 27084692    Reactivity: Human

**Podocyte-specific Nox4 deletion affords renoprotection in a mouse model of diabetic nephropathy.**

Jha, J.C. et al. (2015) Diabetologia. [Epub ahead of print]

PubMed ID: 26508318    Reactivity: Mouse

**Does chronic raise of metal ion levels induce oxidative DNA damage and hypoxia-like response in patients with metal-on-metal hip resurfacing?**

Savarino, L. et al. (2015) J Biomed Mater Res B Appl Biomater. [Epub ahead of print].

PubMed ID: 26477446    Reactivity: Human

**Higher urinary Levels of 8-hydroxy-2'-deoxyguanosine are associated with a worse RANKL/OPG ratio in postmenopausal women with osteopenia.**

Cervellati, C. et al. (2015) *Oxid Med Cell Long.* [Epub ahead of print].

**PubMed ID:**    **Reactivity:** Human

**Turmerone enriched standardized Curcuma longa extract alleviates LPS induced inflammation and cytokine production by regulating TLR4/IRAK1/ROSMAPK/NF- $\kappa$ B axis.**

Rana, M. et al. (2015) *J Functional Foods.* 16 (2015): 152163.

**PubMed ID:**    **Reactivity:** Mouse

**Synthesis, characterization and biological activity of some unsymmetrical Schiff base transition metal complexes.**

Esmadi, F.T. et al. (2015) *Drug Chem Toxicol.* :1-7.

**PubMed ID:** 25791998    **Reactivity:** Human

**Late-intervention study with ebselen in an experimental model of type 1 diabetic nephropathy.**

Tan, S.M., Sharma, A., Stefanovic, N. and de Haan, J.B. (2015) *Free Radic Res.* 49(3):219-27.

**PubMed ID:** 25465090    **Reactivity:** Mouse

**Immediate and delayed effects of growth conditions on ageing parameters in nestling zebra finches.**

Reichert, S. et al. (2015) *J Exp Biol.* 218(Pt 3):491-9.

**PubMed ID:** 25524985    **Reactivity:** Zebra finch

**A derivative of Bardoxolone methyl, dh404, in an inverse dose-dependent manner, lessens diabetes-associated atherosclerosis and improves diabetic kidney disease.**

Tan, S. M., et al. (2014) *Diabetes.* 63(9):3091-103.

**PubMed ID:** 24740568    **Reactivity:** Mice

**Elevation impacts the balance between growth and oxidative stress in coal tits.**

Stier, A., et al. (2014) *Oecologia.* 175(3):791-800.

**PubMed ID:** 24805201    **Reactivity:** Bird (coal tits)

**Evaluation of vitamin B12 effects on DNA damage induced by paclitaxel.**

Alzoubi, K., Khabour O., Khader M., Mhaidat N. and Al-Azzam, S. (2014) *Drug Chem Toxicol.* 37(3):276-80.

**PubMed ID:** 24215581    **Reactivity:** Human

**Effect of Therapeutic Hypothermia on DNA Damage and Neurodevelopmental Outcome Among Term Neonates with Perinatal Asphyxia: A Randomized Controlled Trial.**

Gane, B.D., et al. (2014) *J Trop Pediatr.* 60(2):134-40.

**PubMed ID:** 24343823    **Reactivity:** Human

**Disruption of pro-oxidant and antioxidant systems with elevated expression of the ubiquitin proteasome system in the cachectic heart muscle of nude mice.**

Hinch, E. C. A., Sullivan-Gunn, M. J., Vaughan V. C., McGlynn M. A., Lewandowski, Paul A. (2013) *J Cachexia Sarcopenia Muscle.* 4(4):287-93.

**PubMed ID:** 24030522    **Reactivity:** Mouse

**Oxidative Damage of DNA Confers Resistance to Cytosolic Nuclease TREX1 Degradation and Potentiates STING-Dependent Immune Sensing.**

Gehrke, N. et al. (2013) *Immunity.* 39(3):482-95.

**PubMed ID:** 23993650    **Reactivity:** Mouse



**Differential effects of docosahexanoic acid (DHA) on preterm and term placental pro-oxidant/anti-oxidant balance.**

Stark, M. et al. (2013) *Reproduction*. 146(3):243-51.

**PubMed ID:** 23813449 **Reactivity:** Human

**The Modified Selenenyl Amide, M-hydroxy Ebselen, Attenuates Diabetic Nephropathy and Diabetes-Associated Atherosclerosis in ApoE/GPx1 Double Knockout Mice.**

Tan, S.M., et al. (2013) *PLoS ONE*. 8(7): e69193.

**PubMed ID:** 23874911 **Reactivity:** Mouse

**TiO<sub>2</sub> Nanoparticle Exposure and Illumination during Zebrafish Development: Mortality at Parts per Billion Concentrations.**

Bar-Ilan, O. et al. (2013) *Environ Sci Technol*. 47 (9): 4726-4733.

**PubMed ID:** 23510150 **Reactivity:** Zebrafish

**Poor sleep in PCOS; is melatonin the culprit?**

Shreeve, N. et al. (2013) *Hum Reprod*. 28 (5): 1348-1353.

**PubMed ID:** 23438443 **Reactivity:** Human

**Grasshoppers' adaptation to elevated radioactivity in the Chernobyl exclusion zone.**

Mortensen, L.H. (2013) Roskilde University Dissertation

**PubMed ID:** **Reactivity:** Grasshopper

**Consumption of a low glycaemic index diet in late life extends lifespan of Balb/c mice with differential effects on DNA damage.**

Nankervis, S.A., Mitchell, J.M., Charchar, F.J., McGlynn, M.A. and Lewandowski, P.A. (2013) *Longev Healthspan*. 2(1):4.

**PubMed ID:** 24472560 **Reactivity:** Mouse

**Light-induced cell detachment for cell sheet technology.**

Hong, Y. et al. (2013) *Biomaterials*. 34 (1): 11-18.

**PubMed ID:** 23069710 **Reactivity:** Mouse

**Puerarin prevents high glucose-induced apoptosis of Schwann cells by inhibiting oxidative stress.**

Wu, Y., Xue, B., Li, X. and Liu, H. (2012) *Neural Regen Res*. 7 (33): 2583-2591.

**PubMed ID:** 25368634 **Reactivity:** Mouse

**The protective effect of Alpha lipoic acid on Schwann cells exposed to constant or intermittent high glucose.**

Sun, L. et al. (2012) *Biochem Pharmacol*. 84 (7): 961-973.

**PubMed ID:** 22796564 **Reactivity:** Mouse

**Ginsenoside Rb1 relieves glucose fluctuation induced oxidative stress and apoptosis in Schwann cells.**

Xue, B. et al. (2012) *Neural Regen Res*. 2012 (30): 2340-2346.

**PubMed ID:** 25538758 **Reactivity:** Mouse

**Eicosapentaenoic Acid and Oxypurinol in the Treatment of Muscle Wasting in a Mouse Model of Cancer Cachexia.**

Vaughan, V.C., Sullivan-Gunn, M., Hinch, E., Martin, P., Lewandowski, P.A. (2012) *PLoS ONE*. 7(9): e45900.

**PubMed ID:** 23029301 **Reactivity:** Mouse

**Titanium dioxide nanoparticles produce phototoxicity in the developing zebrafish.**

Bar-Ilan, O. et al. (2012) *Nanotoxicology*. 6 (6): 670-679.

**PubMed ID:** 21830861 **Reactivity:** Zebrafish

**Evaluation of vitamin B12 effects on DNA damage induced by pioglitazone.**

Alzoubi, K., Khabour, O., Hussain, N., Al-zazzam, S. and Mhaidat, N. (2012) *Mutat Res.* 748 (1-2): 48-51.

**PubMed ID:** 22790087 **Reactivity:** Human

**Protective Effects of Salvianolic Acid B on Schwann Cells Apoptosis Induced by High Glucose.**

Sun, L. et al. (2012) *Neurochemical Res.* 37 (5): 996-1010.

**PubMed ID:** 22252725 **Reactivity:** Mouse

**Oxidative Stress in HPV-Driven Viral Carcinogenesis: Redox Proteomics Analysis of HPV-16 Dysplastic and Neoplastic Tissues.**

De Marco, F. et al. (2012) *PLoS ONE.* 7(3): e34366.

**PubMed ID:** 22470562 **Reactivity:** Human

**Inhibitory effects of Salvianolic acid B on apoptosis of Schwann cells and its mechanism induced by intermittent high glucose.**

Sun, L. et al. (2012) *Life Sci.* 90 (3-4): 99-108.

**PubMed ID:** 22036624 **Reactivity:** Mouse

**A qPCR-based assay to quantify oxidized guanine and other FPG-sensitive base lesions within telomeric DNA.**

O'Callaghan, N., Baack, N., Sharif, R. and French, M. (2011) *Biotechniques.* 51 (6): 403-411.

**PubMed ID:** 22150331 **Reactivity:** Human

**The effect of cocoa supplementation on hepatic steatosis, reactive oxygen species and LFABP in a rat model of NASH.**

Janevski, M., Antonas, K.N., Sullivan-Gunn, M.J., McGlynn, M.A. and Lewandowski, P.A. (2011) *Comp Hepatol.* 10(1):10.

**PubMed ID:** 22081873 **Reactivity:** Rat

**Reduction of Oxidative Damage Reflects a Better Kidney Transplantation Outcome.**

La Manna, G. et al. (2011) *Am J Nephrol.* 34, 496-504.

**PubMed ID:** 22041478 **Reactivity:** Human

**Integrated exposure assessment of sewage workers to genotoxicants: an urinary biomarker approach and oxidative stress evaluation.**

Zabadi, H.A. et al. (2011) *Environ Health.* 10 (23).

**PubMed ID:** 21435260 **Reactivity:** Human

**Transgenic Mice Expressing Cyclooxygenase-2 in Hepatocytes Reveal a Minor Contribution of This Enzyme to Chemical Hepatocarcinogenesis.**

Izquierdo, C.L. et al. (2011) *Am J Pathol.* 178 (3): 1361-1373.

**PubMed ID:** 21356386 **Reactivity:** Mouse

## Reviews

---

There are no reviews yet.