Quantify Oxidative Damage on DNA by measuring 8-OHdG

DNA Damage (8-OHdG) StressXpress® EIA Kit

StressMarq Biosciences INC.
Experts in Cellular Stress, Heat Shock Proteins & Ion Channels/Transporter

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StressMarq's 8-OH-dG EIA is a competitive assay that can be used for the quantification of 8-OH-dG in urine, cell culture, plasma,and other sample matrices. The EIA utilizes an anti-mouse IgG-coated plate and a tracer consisting of an 8-OH-DG-enzyme conjugate. This format has the advantage of providing low variability, and increased sensitivity compared to assays that utilize an antigen-coated plate. Our EIA typically displays IC_{50}(50% B/B0) and IC_{80}(80% B/B0) values of approximately 100 and 30 pg/mL, respectively. Mbioscience is the sole distributor for StressMarq products in Malaysia.

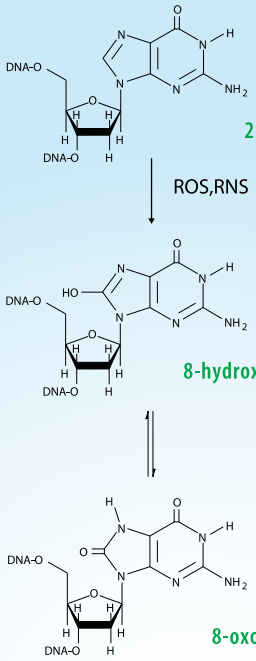
Background of 8-OHdG

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. 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.

Kit Components

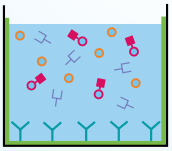
Catalog Number	Item	96 wells Quantity/Size	480 wells Quantity/Size
SKC-120A	8-hydroxy-2-deoxy Guanosine Monoclonal Antibody	1 vial/100 dtn	1 vial/500 dtn
SKC-120B	8-hydroxy-2-deoxy Guanosine AChE Tracer	1 vial/100 dtn	1 vial/500 dtn
SKC-120C	8-hydroxy-2-deoxy Guanosine EIA Standard	1 vial	1 vial
SKC-120D	EIA Buffer Concentrate (10X)	2 vials/10 ml	4 vials/10 ml
SKC-120E	Wash Buffer Concentrate (400X)	1 vial/5 ml	1 vial/12.5 ml
SKC-120F	Tween 20	1 vial/3 ml	1 vial/3 ml
SKC-120G	Goat Anti-Mouse IgG Coated Plate	1 plate	5 plates
SKC-120H	Plate Cover	1 cover	5 covers
SKC-120I	Ellman's Reagent	3 vials/100 dtn	6 vials/250 dtn
SKC-120J	EIA Tracer Dye	1 vial	1 vial
SKC-120K	EIA Antiserum Dye	1 vial	1 vial

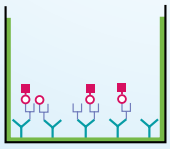
Oxidation of guanosine

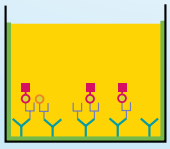


Assay Procedure


Plates are pre-coated with goat anti-mouse IgG and blocked with a proprietary formulation of proteins.


1. Incubate with tracer, antibody, and either standard or unknown sample.


2. Wash to remove all unbound reagents.


3. Develop the well with Ellman's Reagent.

= Goat Anti-Mouse IgG
= Specific antibody to 8-OH-dG
= Blocking Proteins
= Acetylcholinesterase linked to 8-OH-dG (Tracer)
= Free 8-OH-dG

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Calbiotech 25(OH) Vitamin D ELISA

Calbiotech's 25(OH) Vitamin D ELISA features 100% Cross-reactivity to D2 & D3 and no outside extraction step! This is a sensitive, robust and automation-friendly assay, requiring no external sample preparation and no organic solvents with a 2.5 hour total assay time. Calbiotech is distributed by Mbioscience Solutions in Malaysia. Feel free to contact Team MBIO for Calbiotech's products.

Intended Use

The Calbiotech, Inc. 25-hydroxy Vitamin D ELISA is designed for the quantitation of total 25(OH) Vitamin D in human serum and plasma.

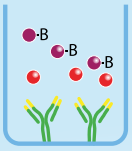
Summary and Explanation

Vitamin D is a steroid hormone involved in the active intestinal absorption of calcium and in the regulation of its homeostasis. Vitamin D has two isomers: Vitamin D2 and Vitamin D3. Vitamin D2 is obtained from dairy products whereas Vitamin D3 is produced in the skin after exposure to ultraviolet light. In the liver, Vitamin D is hydroxylated at its carbon 25 to form 25(OH) Vitamin D. This metabolite is the predominant circulating form of Vitamin D and is considered to be an accurate indicator of the general Vitamin D status of an individual. Vitamin D deficiency has been linked to many diseases including osteoporosis, rickets, osteomalacia, cancers, and cardiovascular diseases. Both dietary supplements of Vitamin D that are currently available in the market (Vitamin D2 and Vitamin D3) are converted to 25(OH) Vitamin D in the liver. The sum of the concentrations of 25(OH) Vitamin D2 and 25(OH) Vitamin D3, in serum or plasma, is referred to as "Total 25(OH) Vitamin D".

Assay Advantages

- Wide dynamic range: 1.25ng/mL to 150ng/mL
- Reproducibility: intra and inter-precision <8%
- Linearity: 90% - 111%
- 100% cross-reactivity to D2 & D3
- Standards traceable to NIST SRM-972A
- Ease of use: No off-well sample extraction
- No organic solvents
- Sensitive, robust & automation-friendly
- 2.5 hour total assay time (90 minute CLIA)
- ELISA & CLIA formats

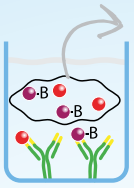
Assay Procedure

1. 

· 10µL sample size
· No external preparation

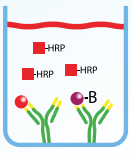
Samples, Controls, Standards and Biotin

Incubate 90 mins @ RT

2. 

· Wash 3X with 300µL wash buffer

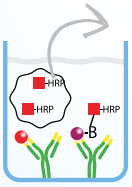
Wash

3. 

· Add 200µL of Streptavidin-HRP

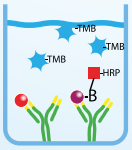
HRP

Incubate 30 mins @ RT

4. 

· Wash 3X with 300µL wash buffer

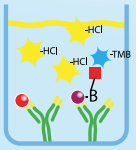
Wash

5. 

· Add 200µL of TMB

TMB

Incubate 30 mins @ RT

6. 

· Add 50µL of stop solution
· Read @ 450nm

Stop & Read