

Quantify Oxidative Damage  
on DNA by measuring 8-OHdG

## DNA Damage (8-OHdG) StressXpress® EIA Kit



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.

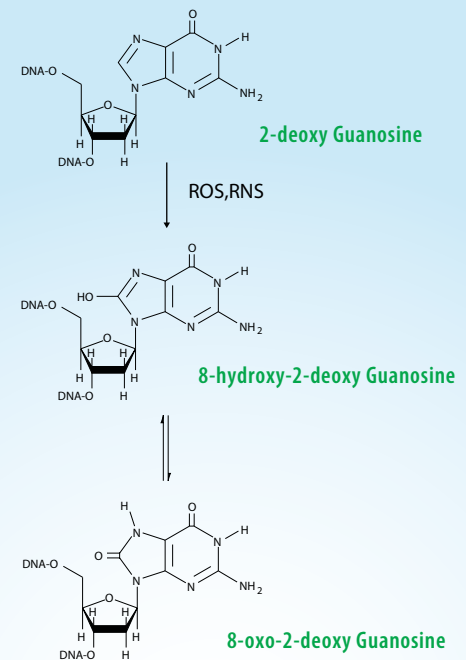
#### Background of 8-OHdG

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 free 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.

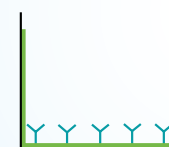
#### Kit Components

| Catalog Number | Item  | 96 wells<br>Quantity/Size | 480 wells<br>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                     |

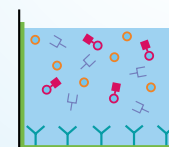
#### Oxidation of guanosine



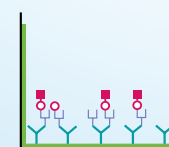
#### Assay Procedure



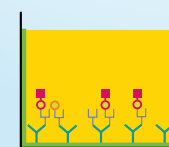
Plates are pre-coated with goat anti-mouse IgG and blocked with a proprietary formulation of proteins.



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