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8-hydroxy-2-deoxyguanosine (8-OHdG) in Urine LC-MS/MS Analysis Kit

Oxidative stress reflects a disturbance in the balance between the production and accumulation of reactive oxygen species (ROS). When ROS levels are elevated, oxidative damage occurs in proteins, lipids, and DNA. 8-hydroxy-2-deoxyguanosine (8-OHdG) is a product of oxidative DNA modifications; therefore, urinary 8-OHdG serves as a non-invasive biomarker of oxidative DNA damage. In this context, we developed an analytical method for the quantification of urinary 8-OHdG based on LC-MS/MS.

Highlights of the Analysis Kit

- Just a few pipetting steps for the sample preparation; for urine "**dilute and shoot**"
- Total run time is 9 min.
- Use of stable isotope labeled internal standard
- Small volume of patient's sample is required
- Long life span of HPLC column

Parameters

8-hydroxy-2-deoxyguanosine (8-OHdG)

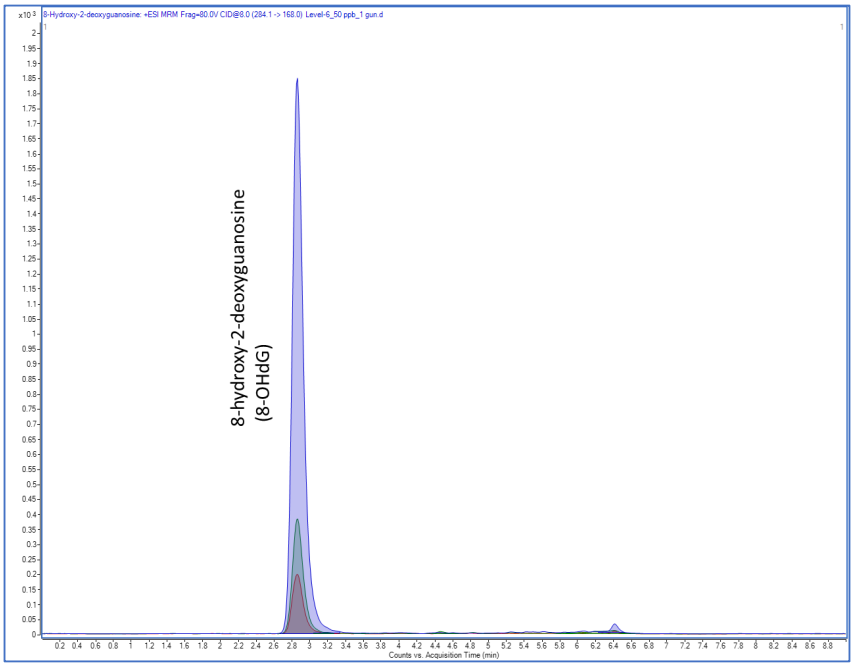
Sample Type

Urine

Sample Preparation

1	Pipette 100 µL of calibrator/control/urine sample into HPLC vial
2	Then, add 25 µL of internal standard and 375 µL of Reagent-1 respectively, vortex 5 sec.
3	And inject to LC-MS/MS system

Example Chromatogram



Total ion chromatogram of 8-hydroxy-2-deoxyguanosine

Method Performance

All results were obtained using Agilent 6470 TQ system

Analyte	LOQ (ng/ml)	Linearity (ng/ml)	Recovery		Repeatability			
					intra-day		inter-day	
			LLQC* (%)	HLQC** (%)	LLQC (%CV)	HLQC (%CV)	LLQC (%CV)	HLQC (%CV)
8-OHdG	1.0	0.25 – 50.0	99	102	4.97	1.42	7.88	3.17

* LLQC: Low-level quality control
** HLQC: High-level quality control

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