U-PLEX®

Rat FGF-21

Product Options	Catalog Number	Description
Multiplex	K153ACM, K253ACM	U-PLEX Metabolic Group 1 (rat) Assay
Singleplex	K1535WK-1/-2/-4	U-PLEX Rat FGF-21 Assay with SECTOR™ plates
	K1535WK-21/-22/-24	U-PLEX Rat FGF-21 Assay with QuickPlex Ultra™ plates
	K2535WK-2/-4	U-PLEX Rat FGF-21 Assay with 384-well plates
Antibody Set	B215W-2/-3	U-PLEX FGF-21 Antibody Set
Protocol	U-PLEX Product Inserts are available at www.mesoscale.com	

The MESO SCALE DISCOVERY® U-PLEX platform was designed to provide ultimate flexibility for detection of biomarkers in a wide variety of sample types. This datasheet provides the representative performance of the U-PLEX® Rat FGF-21 Assay tested on U-PLEX SECTOR plates run as a multiplex. The data do not represent the product specifications. Under your experimental conditions, the assay may perform differently from the representative data. U-PLEX assays are offered in either singleplex or multiplex; both are available on 96- or 384-well plates. See a U-PLEX product insert for instrument compatibility.

Representative Calibration Curve and Sensitivity
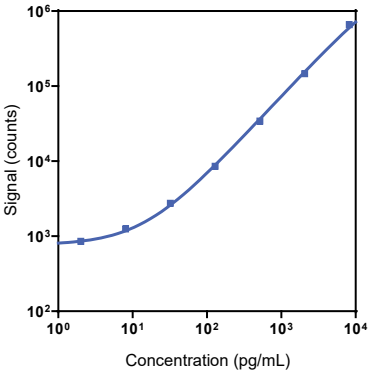
Assay	Median LLOD (pg/mL)	LLOD Range (pg/mL)
FGF-21	2.8	2.0-3.0

The Calibrator curve was fitted with a 4-parameter logistic model with a $1/Y^2$ weighting. The lower limit of detection (LLOD) is a calculated concentration corresponding to 2.5X the standard deviation above the background (zero Calibrator).

Precision

Control	Average Conc. (pg/mL)	Average Intra-run Conc. (%CV)	Inter-run Conc. (%CV)
High	4,176	2.5	8.7
Mid	846	3.6	10.5
Low	202	4.3	12.1

Controls were made by spiking Calibrator into assay diluent at 3 levels within the quantitative range of the assay. Average intra-run concentration %CV is the average %CV of the control replicates within an individual run. Inter-run concentration %CV is the variability of controls across multiple runs.

Spot the Difference ®

MSD® U-PLEX Rat FGF-21

Tested Samples

Sample Type	Serum (N=12)	EDTA Plasma (N=12)	P800 Plasma (N=9)
Median (pg/mL)	730	1,400	4,280
Range (pg/mL)	262–3,140	727–5,010	2,490–8,100
% Detected	100	100	100

Normal serum, EDTA plasma, and P800 plasma samples were diluted 4-fold prior to the assay.

Dilution Linearity

Serum			EDTA Plasma			P800 Plasma			Cell Culture Media		
Fold Dilution	Average % Recovery	% Recovery Range	Fold Dilution	Average % Recovery	% Recovery Range	Fold Dilution	Average % Recovery	% Recovery Range	Fold Dilution	Average % Recovery	% Recovery Range
2	98	91–106	2	112	100–120	2	98	92–104	2	107	96–113
8	101	93–107	8	94	90–99	8	102	95–108	8	100	97–103
16	75	46–102	16	93	84–102	16	113	103–126	16	99	96–106

Normal rat serum, EDTA plasma, P800 plasma, and cell culture media were spiked with Calibrator and tested at different dilutions. Percent recovery at each dilution level was normalized to the dilution-adjusted, 4-fold concentration. Samples may benefit from additional dilution with assay diluent to reduce matrix effects.

% Recovery = (measured concentration / expected concentration) x 100

Spike Recovery

Spike Level	Serum		EDTA Plasma		P800 Plasma		Cell Culture Media	
	Average % Recovery	% Recovery Range	Average % Recovery	% Recovery Range	Average % Recovery	% Recovery Range	Average % Recovery	% Recovery Range
High	81	75–91	88	72–97	82	75–91	133	107–146
Mid	84	76–94	92	75–104	86	80–94	130	111–152
Low	88	77–97	96	81–104	90	80–97	128	108–152

Normal serum, EDTA plasma, P800 plasma, and cell culture media were spiked with Calibrator at 3 levels. Spiked samples were diluted 4-fold to determine the expected concentration of the analyte. Samples may benefit from additional dilution with assay diluent to reduce matrix effects.

% Recovery = (measured concentration / expected concentration) x 100

Specificity

To assess specificity, the FGF-21 Antibody Set was tested individually against a larger panel of analytes for nonspecific binding (BDNF, C-Peptide, Desghrelin, FGF-21, Ghrelin (octanoylSer3), GLP-1 (7-36), GLP-1 (9-36), Glucagon, Insulin, Leptin, PYY (3-36)). Nonspecific binding was less than 0.5%.

% Nonspecificity = (nonspecific signal / specific signal) x 100

Diluent Compatibility

The data included in this document were collected with Assay Diluent 13 (supplemented with 1,000 KIU/mL Aprotinin [provided] and 100 μM diprotin A [not provided]) and Antibody Diluent 11. MSD offers a range of assay and antibody diluents for separate purchase. Depending on your assay needs, other diluents may be tested. Diprotin A should be purchased separately.

Assay Components

Calibrator: FGF-21 is included in Calibrator 18. The FGF-21 Calibrator is a full length recombinant protein expressed in *E. coli*.
Antibodies: The U-PLEX Rat FGF-21 Assay uses a goat monoclonal antibody for capture and a goat polyclonal antibody for detection.
Assay generation: A

Note: This datasheet contains representative assay performance data. In custom multiplex formats, the assay may perform differently from the representative data shown.