Q-Plex™ Human Environmental Enteric Dysfunction (11-Plex)



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Background

Environmental enteric dysfunction (EED) is characterized by inflammation at mucosal sites, reduced intestinal barrier integrity, and poor absorption of nutrients. EED is common among people living in low-resource settings with high enteric-pathogen prevalence and poor sanitation. Complications related to EED include stunted growth, reduced responsiveness to vaccines, and impaired cognitive development. Children are therefore especially at risk as these severe complications increase susceptibility to other childhood diseases such as pneumonia, acute diarrhea, and malaria.

Indications	Markers	Function
Growth and Vaccine Response	Intvestinal fatty acid binding protein (I-FABP)	Small intestine damage
	Soluble CD14 (sCD14)	White blood cell activation
	Insulin-like growth factor 1(IGF-1)	Bone and tissue growth
	Fibroblast growth factor 21 (FGF21)	Modulates metabolic pathways
Systematic Inflammation	Alpha-1-acid glycoprotein (AGP)	Inflammation
	C-reactive protein (CRP)	Inflammation
Nutrition	Ferritin	Iron stores
	Soluble transferrin receptor (sTfR)	Iron deficiency
	Retinol binding protein (RBP)	Vitamin A transport
	Thyroglobulin (Tg)	Iodine nutritional status
Malaria	Histidine-rich protein 2 (HRP2)	Presence/absence of malaria

Developed in collaboration with PATH, the Q-Plex Human Environmental Enteric Dysfunction (11-Plex) was designed to be a tool to help with identifying people with EED at high risk for additional complications. The array provides researchers an easy-to-use and cost-effective means of generating a profile of nutritional and inflammatory biomarkers for each sample.

Analyte	Assay Type	Calibrator Range	Upper Limit of Quantification (ULOQ)	Lower Limit of Quantification (LLOQ)	Limit of Detection	Precision* (Inter-assay)	Precision* (Intra-assay)	Average* Linearity
AGP	Competitive	0.36 - 0.00049 (g/L)	0.25 (g/L)	0.0019 (g/L)	0.00025 (g/L)	12%	5%	107%
CD-14	Competitive	1,750 - 2.4 (ng/mL)	1,225 (ng/mL)	9.4 (ng/mL)	1.2 (ng/mL)	11%	6%	93%
CRP	Competitive	5.61 - 0.0077 (mg/L)	3.93 (mg/L)	0.03 (mg/L)	0.0038 (mg/L)	14%	5%	95%
Ferritin	Sandwich	115 - 0.16 (µg/L)	80.5 (µg/L)	0.21 (µg/L)	0.079 (µg/L)	12%	8%	102%
FGF-21	Sandwich	800 - 1.10 (pg/mL)	560 (pg/mL)	1.40 (pg/mL)	0.55 (pg/mL)	12%	6%	100%
HRP2	Sandwich	0.96 - 0.0013 (µg/L)	0.67 (µg/L)	0.0017 (µg/L)	0.00066 (µg/L)	13%	4%	100%
IFABP	Sandwich	3,000 - 4.12 (pg/mL)	2,100 (pg/mL)	5.3 (pg/mL)	2.06 (pg/mL)	10%	5%	92%
IGF-1	Sandwich	350 - 0.48 (ng/mL)	245 (ng/mL)	1.87 (ng/mL)	0.24 (ng/mL)	13%	9%	118%
RBP4	Competitive	1.4 - 0.0019 (µmol/L)	0.98 (µmol/L)	0.0075 (µmol/L)	0.0010 (µmol/L)	11%	8%	93%
sTfR	Sandwich	108 - 0.15 (mg/L)	75.3 (mg/L)	0.19 (mg/L)	0.074 (mg/L)	15%	6%	115%
Thyroglobulin	Sandwich	13.7 - 0.019 (µg/L)	9.59 (µg/L)	0.024 (µg/L)	0.0094 (µg/L)	13%	4%	100%

** Actual values may vary from kit to kit. Please see the In-Kit Certificate of Analysis included in your kit for* specific values.

ISO 9001 Registered Quality Management

ISO 13485 Registered Medical Devices

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