

Test Requisition #

Physician :



**MOSAIC**  
DIAGNOSTICS  
*Formerly Great Plains Laboratory*

LAB #:  
PATIENT:  
ID:  
SEX:  
DOB:

AGE:

CLIENT #:  
DOCTOR:  
NAME  
ADDRESS  
CITY, STATE, POSTAL.

*Zonulin Family Protein; stool*

	RESULT / UNIT	REFERENCE INTERVAL	LOW	MOD	HIGH
Zonulin Family Protein*	30.8 ng/mL	< 80.0	█	█	█

This test measures a zonulin family protein (ZFP), identified as properdin. Elevated fecal levels of ZFP have been associated with metabolic syndrome, obesity, and apparently healthy cigarette smokers. High serum levels of ZFP (antigen) are correlated with abnormal results of the Lactulose Mannitol test; the long-accepted standard for intestinal permeability, but to date no such correlation has been reported with fecal ZFP. Excessive intake of simple sugars, sodium, emulsifiers, microbial transglutaminase (food additive) and nano-particles may also be triggers for increased fecal ZFP and intestinal permeability. Possible interventions to restore the gastrointestinal mucosal barrier include dietary changes, treatment of dysbiosis, digestive supports and anti-inflammatory supplements; specifically quercetin, vitamin C, curcumin, gamma-linoleic acid, omega-3 fatty acids (EPA, DHA), and aloe vera. Other nutrients such as zinc, beta-carotene, pantothenic acid, and L-glutamine may provide some support for rejuvenation of the mucosal barrier. The use of some probiotics has been shown to reduce serum and fecal zonulin levels, and inulin (about 10 grams per day) lowered serum zonulin after just five days in healthy young subjects. Consider a Comprehensive Stool Analysis to further investigate potential causes of increased intestinal permeability.

**References:**

Scheffler L, Crane A, Heyne H et al. (2018) Widely used commercial ELISA does not detect precursor of haptoglobin2, but recognizes properdin as a potential second member of the zonulin family. *Frontiers in Endocrinology* (2018) doi: 10.3389/fendo.2018.00022.

Fasano A. Intestinal Permeability and Its Regulation by Zonulin: Diagnostic and Therapeutic Implications *Clin Gastroenterol Hepatol* (2012)10:1096-1100.

Fasano A. Zonulin, regulation of tight junctions, and autoimmune diseases. *ANYAS* (2012)1258:25-33.

Lamprech M, Bogner S, Shipinger G et al. Probiotic supplementation affects markers of intestinal inflammation in trained men; a randomized, double-blinded, placebo-controlled trial. *Int J Sports Nutr* (2012)9:45 www.jisn.com/content/9/1/45.

Moreno-Navarrete JM, Sabater M, Ortega F et al. Circulating zonulin, a marker of intestinal permeability, is increased in association with obesity-associated insulin resistance. *PLOS ONE* (2012)7:e37160 doi:10.1371/journal.pone.0037160.

Zak-Gob A, Kocek P, Aptekorz M et al. Gut microbiota, microinflammation, metabolic profile, and zonulin concentration in obese and normal weight subjects. *Int J Endocrinol* (2013) doi:10.1155/2013/674106.

**SPECIMEN DATA**

Comments:

Date Collected: 01/09/2024  
 Date Received: 01/13/2024  
 Date Reported: 01/17/2024  
 Methodology: ELISA

\*For Research Use Only. Not for use in diagnostic procedures.