Product Data Sheet

Product number **G007**
Revision number RN3.3

Product Name DGPx1 (deamidated gliadin peptide)

Synonym 26mer γ-gliadin, deamidated; 26mer DGP (Corresponds to Zedira product No. G053); Deamidated Gliadin Peptide – fusion protein

Background info Detection of gliadin antibodies has been used for a long time in celiac disease diagnostics but suffered from a low specificity. This disadvantage was overcome by the introduction of deamidated gliadin peptides as antigen.

The rationale behind is that tissue transglutaminase catalyzes gliadin deamidation in the intestinal mucosa of celiac disease patients, resulting in deamidated gliadin peptides which are recognized by HLA receptors of immune cells. Therefore, deamidated gliadin antibodies are specific for celiac disease.

We introduced four different variations of deamidated gliadin antigens composed by a carrier protein linked with a combination of the deamidated 33-mer and 26-mer gamma gliadin peptides and the DQ2-GI- and DQ2-GII-peptides (Dørum S. et al., J Proteome Res. 2009; 8:1748-55). In addition, the non-deamidated native versions as well as the carrier protein control are also available.

Art. No.	Name	
G051	26mer gliadin peptide	Carrier – 26mer γ-gliadin
G052	33mer gliadin peptide	Carrier – 33mer α-gliadin
G055	Carrier protein control	Carrier
G007 / G060	DGPx1 (26mer DGP)	Carrier – 26mer γ-gliadin, deamidated
G054	33mer DGP	Carrier – 33mer α-gliadin, deamidated
G006	DGPx2	Carrier – 33mer α-gliadin, deamidated – 26mer γ-gliadin, deamidated
G005	DGPx4	Carrier – 33mer α-gliadin, deamidated – 26mer γ-gliadin, deamidated – DQ2-γ1 – DQ2-γ2

Description DGPx1 is a fusion protein of a deamidated gliadin peptide fused with a carrier protein to be used as antigen for the detection of antibodies specific for deamidated gliadin. The deamidated gliadin peptide is based on the 26-mer gamma gliadin (Dørum S. et al., J Proteome Res. 2009; 8:1748-55).

Source Recombinantly produced in *E. coli*

Quantity 100 µg / 250 µg / 500 µg / 1 mg / 5 mg

Molecular Weight 25.77 kDa

Appearance White lyophilized solid.

Reagents DGPx1 is lyophilized from a solution of ~50 mM NaH_2PO_4, pH 6.8.

Reconstitution Add at least the volume of H_2O the protein is lyophilized from (see Certificate of Analysis) to the vial of lyophilized powder. Rotate vial gently until solid dissolves. After reconstitution, the solution should be stored frozen in working aliquots.

Application The recombinant antigen is meant for solid (ELISA and immuno blot) and fluid phase diagnostic assays. The protein is recognized y human type IgA and IgG antibodies.

Coating Dilute DGPx1 with your coating buffer to an appropriate concentration e.g. 1 µg/ml. Please note that coating conditions have to be evaluated carefully.

ELISA-Performance DGPx1 can be used to rule out gliadin false positive patients while it detects specifically celiac disease patients.

An ELISA with coated DGPx1 as antigen was performed with sera from healthy donors, non-celiac disease patients with positive anti-gliadin antibody titer and celiac disease patient's sera. In figure 2 it is shown that the antibody titer for the negative and for the false positive sere is below the cut-off. Sera from celiac disease patients were tested positive for antibodies against deamidated gliadin.

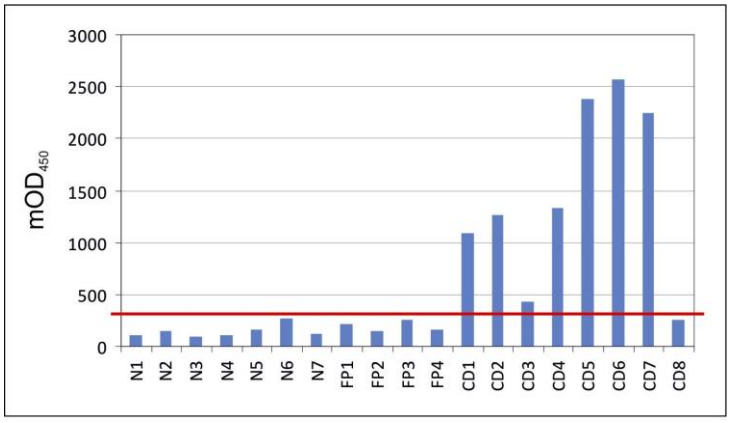

Figure 2: Detection of deamidated gliadin-antibodies (IgG-type) in sera from healthy donors (N), non-celiac disease patients with positive anti-gliadin antibody titer (false positives, FP), and celiac disease patients (CD). Red line: cut off. Note: CD8 is positive for deamidated gliadin antibodies of the IgA-type.

The comparison of DGPx1 with commercially available DGP-ELISA using sera from normal blood donors showed slightly better discrimination by DGPx1 (Table 1). The commercially available DGP-ELISA detected 2 sera at the cut off (grey-area); these sera are negative in the DGPx1-ELISA.

Table 1: Comparison of DGPx1 with commercially available DGP-ELISA. In total 39 sera from normal blood donor with unknown medical conditions were tested.

Serum from normal blood donor	DGPx1	commercially available DGP-ELISA
negative	34	31
positive	5	6
grey-area	0	2

Storage and stability Store lyophilized DGPx1 at -80°C. Stability is given for at least 4 years when stored at -80°C (see retest date on Certificate of Analysis), with potential to date extend after retesting.

If storage at -80°C is not possible, storage at ≤ -20°C is recommended. Solutions of DGPx1 are stable for at least 2 years when stored at ≤ -20°C.

Upon reconstitution, store undiluted working aliquots preferably at -80°C (if not possible at ≤ -20°C, see comment above).

Avoid repeated freezing and thawing.

Delivery is possible at ambient temperature

Related products

G005	DGPx4 (Fusion protein of 4 deamidated gliadin peptides)
G006	DGPx2 (Fusion protein of 2 deamidated gliadin peptides)
E019	Zedi*Xclusive* DGPx1-ab ELISA (IgA)
E020	Zedi*Xclusive* DGPx1-ab ELISA (IgG)

Release date 13 September 2024

NOTE INTENDED FOR RESEARCH USE ONLY, NOT FOR USE IN HUMAN, THERAPEUTIC OR DIAGNOSTIC APPLICATIONS.