

# KRISHZYME™ IdeS Protease

**Catalog Number: KBENZ46**

## Protein Description

The KRISHZYME™ IdeS Protease is an immunoglobulin G (IgG)-degrading protease that cleaves with high specificity. It is derived from *Streptococcus pyogenes*. IdeS is an engineered, recombinant protease overexpressed in *E. coli* that cleaves IgG at a single site below the hinge region, yielding F(ab')<sub>2</sub> and Fc fragments.

## Source:

*Streptococcus pyogenes*

## Expression Host:

*E. coli*

## Purity:

>95% as determined by SDS-PAGE quantitative densitometry by Coomassie Blue Staining.

## Endotoxin:

< 0.05 EU/1000 units as determined by the LAL method.

## N terminal:

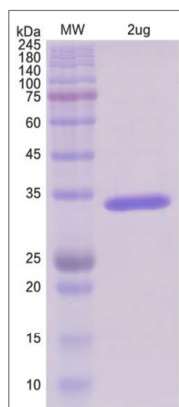
His Tag

## Molecular Mass:

The KRISHZYME™ IdeS has a calculated molecular mass of 37.56 kDa

## SDS-PAGE:

Fig.1.



KDa Marker 98%

Fig. 1. Purity analysis by SDS-PAGE Detection

**Enzyme Activity:**

40 U/ul

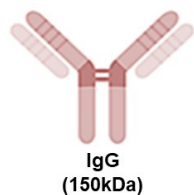
**Concentration:**

40,000 U/mg

**Unit Definition:**

The amount of enzyme required to cut 1ug recombinant monoclonal IgG at >95% for 30 minutes at 37°C is defined as an active unit.

**Cleavage Specificity of IdeS Protease:**



IgG1 Hinge Sequence: S-C-D-K-T-H-T-C-P-P-C-P-A-P-E-L-L-G-G-P-S-V



**Formulation:**

KRISHZYME™ IDeS is supplied as liquid with pH at 8.0 containing PBS pH 7.4 and 50% glycerol. KRISHZYME™ IDeS is also supplied as a lyophilized enzyme.

**Reconstitution:**

Being enzymes, the concentration may differ from lot to lot produced by us. We always recommend referring the accompanying data sheet to view the exact concentration and the recommended dilution schemata.

Centrifuge the vial at 4°C before opening to recover the entire contents. Please contact us for any concerns or special requirements at +91-22-49198700 | Email: [sales1@krishgen.com](mailto:sales1@krishgen.com)

**Storage:**

Store it under sterile conditions at -20°C to -80°C upon receiving for at least 12 months. It is recommended to aliquot the enzyme into smaller quantities for optimal storage. Avoid repeated freeze-thaw cycles.

**Application:**

Domain characterization of therapeutic antibodies.  
Analytical characterization of large, complex biomolecules.

**Protocol:**

1. Add an appropriate amount of IgG (upto 5mg) to the digestive reagent or other compatible buffer\*.
2. Add Krishzyme™ IdeS protease to IgG sample
3. Add 1 unit of Krishzyme™ IdeS per 1ug of IgG
3. Incubate the sample at 37°C for 30-60min. IdeS proteases are most active in buffers at or near neutral pH.
4. \*The recommended digestion buffer is 50 mM sodium phosphate and 150 mM NaCl (pH 6.6), but most common biological buffers are also suitable, such as Tris or PBS. Buffers outside this pH range (e.g. acetate buffers) may be used, but the incubation time and/or enzyme quantity required will have to be optimized on a case-to-case basis.

**Note-**

- IgG concentration should ideally be in the range of 0.5 - 20 mg/ml.
- Krishzyme™ IdeS efficiently cleaves human, humanized, chimeric, monkey, rabbit and sheep IgGs. It has moderate activity against mouse IgG2a and IgG3.
- Krishzyme™ IdeS also cleaves many Fc-fusion proteins as well as antibody drug conjugates (ADCs).
- The Krishzyme™ IdeS has a histidine tag for easy removal.
- Krishzyme™ IdeS may be used in the same reaction as Krishzyme™ Swift™ PNGase F (Cat#KPGF-003-B) to perform fragmentation and removal of Fc glycans in a single step by using the recommended digestion buffer.

**References:**

IdeS, a novel streptococcal cysteine proteinase with unique specificity for immunoglobulin G  
U von Pawel-Rammingen, BP Johansson... - The EMBO ..., 2002 - embopress.org

Insulin-degrading enzyme: embarking on amyloid destruction Kurochkin - Trends in biochemical sciences, 2001 - Elsevier

Amyloidogenic determinant as a substrate recognition motif of insulin-degrading enzyme Kurochkin - FEBS letters, 1998 - Wiley Online Library

Cloning and Expression of the cDNA for a Drosophila Insulin-Degrading Enzyme  
WL Kuo, BD Gehm, MR Rosner - Molecular Endocrinology, 1990 - academic.oup.com

Structure of the streptococcal endopeptidase IdeS, a cysteine proteinase with strict specificity for IgG K  
Wenig, L Chatwell... - Proceedings of the ..., 2004 - National Acad Sciences

IdeS and SpeB: immunoglobulin-degrading cysteine proteinases of Streptococcus pyogenes U von Pawel-Rammingen, L Björck - Current opinion in microbiology, 2003 - Elsevier

Intracellular protein degradation: from a vague idea thru the lysosome and the ubiquitin-proteasome system and onto human diseases and drug targeting\*  
A Ciechanover - Cell death and differentiation, 2005 - nature.com

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