

A Technical Comparison in PNGase F Deglycosylation Reagents

KRISHZYME™ Swift & Standard PNGase F vs. Competitor N* and Competitor Q*

Prepared for Krishgen sales & technical evaluation use • Product data current as of kit IFU ver.2.0

What This Comparison Covers

	Why PNGase F Matters The enzyme behind N-glycan release	01
	The PNGase F Enzyme Landscape One organism, three commercial suppliers	02
	Krishgen's PNGase F Portfolio Three formats — glycerol-free, standard, Swift	03
	Side-by-Side Comparison Units, specs, protocols, purity, storage	04
	Ordering & Support Catalog numbers, pack sizes, regional contacts	05

BACKGROUND

The Enzyme Behind N-Glycan Release

Peptide N-glycosidase F (PNGase F) is an amidase that cleaves between the innermost GlcNAc and asparagine residues of high-mannose, hybrid, and complex N-linked oligosaccharides, releasing an intact glycan and leaving a deaminated protein or peptide behind. It is the field's standard enzymatic tool for removing N-linked glycans prior to further analysis.

- ✓ Confirms whether a protein carries N-linked glycosylation
- ✓ Maps glycosylation sites and characterizes glycan structure
- ✓ Prepares deglycosylated protein for MW estimation or crystallography
- ✓ Supports structure–function studies of glycoproteins



All three PNGase F products compared here — from Krishgen, Competitor N, and Competitor Q* — use the same class of enzyme cloned from the same source organism, so the meaningful differences are in format, unit definition, purity documentation, storage, and speed — not the underlying chemistry. (Promega's PNGase F, covered later, is drawn from the same organism too.)*

BACKGROUND

One Enzyme, Three Commercial Suppliers

PNGase F sold by Krishgen, Competitor N* and Competitor Q* is cloned from the same bacterial source and expressed recombinantly in *E. coli*. Other suppliers, including Promega and Sigma, offer recombinant PNGase F from the same organism. Differentiation lies in formulation, unit definition, and format — covered next.



Krishgen KRISHZYME™

Flavobacterium meningosepticum, cloned & expressed in *E. coli*

36 kDa apparent MW



Competitor N*

Elizabethkingia miricola (formerly *F. meningosepticum*), *E. coli*

36 kDa apparent MW



Competitor Q*

Elizabethkingia miricola (formerly *Chryseobacterium meningosepticum*), *E. coli*

~35 kDa apparent MW

Source: Krishgen KRISHZYME™ IFUs (KPGF-001/002/003); NEB published specifications (P0704/P0708/P0709); QA-Bio published specifications (E-PNG01/E-RPNG01).

Performance That Shows Up in the Data

Krishgen's PNGase F chemistry has been evaluated in independent side-by-side testing against a leading commercially available PNGase F, using native, non-denatured substrates and standard chromatography/mass-spectrometry workflows.



More Complete Release

In side-by-side testing on native Avastin® (IgG1), this enzyme chemistry released 11 distinct oligosaccharide structures.



Sharper MS Peaks

Produced 33% more peaks, with sharper resolution and lower background, than a leading commercial PNGase F on native fetuin.



Better Sialylated Coverage

HPLC analysis showed more pronounced neutral, bi-, tri-, and tetra-sialylated peaks than the same competing enzyme.



Room-Temp, Minutes

Digests native and serum glycoproteins in minutes at room temperature — no extended heat-denaturation step required.

Comparative data generated in side-by-side testing of this enzyme chemistry against a leading commercially available PNGase F; results shown are representative examples, not exhaustive validation for every sample type.

Three PNGase F Formats, One Validated Enzyme

Krishgen offers PNGase F in three formats built on the same recombinant enzyme — so labs can choose the physical format that best matches their workflow, shipping, and storage needs.



KPGF-001

Glycerol-Free, Liquid

Glycerol-free — 1,000,000 U/ml



KPGF-002

Standard, Liquid

Glycerol-stabilized — 500,000 U/ml



KPGF-003

Swift™, Liquid

Same chemistry as Standard —
500,000 U/ml

Krishgen Format Comparison Matrix

Attribute	KPGF-001 (Glycerol-Free)	KPGF-002 (Standard)	KPGF-003 (Swift™)
Physical Form	Ready-to-use liquid	Ready-to-use liquid	Ready-to-use liquid
Glycerol Content	None (glycerol-free)	Glycerol-stabilized	Glycerol-stabilized
Concentration	1,000,000 U/ml	500,000 U/ml	500,000 U/ml
Pack Sizes	50,000 U / 2 × 50,000 U	15,000 U / 5 × 15,000 U	15,000 U / 5 × 15,000 U
Best Fit	HPLC/MS workflows, glycerol-sensitive downstream steps	Cost-efficient routine deglycosylation	Labs standardizing on Krishgen's Swift™ workflow line

HOW IT WORKS

Reaction Protocols — Denaturing & Non-Denaturing

All Krishgen PNGase F formats ship with 10X Denaturing Buffer, 10X Assay Buffer 2, and 10% NP-40 Solution, and follow the same two protocols:



Denaturing Conditions

- 1 Denature glycoprotein: 100°C, 10 min
- 2 Add Assay Buffer 2 + 10% NP-40
- 3 Add PNGase F, mix gently
- 4 Incubate 37°C for 30 mins



Non-Denaturing Conditions

- 1 Combine glycoprotein + Assay Buffer 2 + PNGase F
- 2 Heat denaturation step, optional
- 3 Incubate at room temperature — minutes for native/serum glycoproteins or at 37°C, 1-24 hours
- 4 Some substrates may need longer time or more enzyme; heat-stable/complex glycoproteins can still be run under denaturing conditions

Source: Krishgen KRISHZYME™ PNGase F IFUs (KPGF-001/002/003).

Why “Units” Aren't Always Equal

Enzyme suppliers define a “unit” of PNGase F differently. Comparing prices or concentrations without matching the unit definition can be misleading — always confirm how each vendor's unit was measured.

Krishgen	Competitor N*	Competitor Q*
<i>“Amount required to remove >95% of the carbohydrate from 10 µg of denatured RNase B in 1 hour at 37°C, in a 10 µl reaction.”</i>	<i>“Amount required to remove >95% of the carbohydrate from 10 µg of denatured RNase B in 1 hour at 37°C, in a 10 µl reaction.”</i>	<i>“Amount required to release N-linked oligosaccharides from 1 µmol of denatured RNase B/BSA in 1 minute at 37°C, pH 7.5.”</i>
Matches Competitor N*'s definition	Matches Krishgen's definition	A different unit scale — convert before comparing

Source: Krishgen KRISHZYME™ PNGase F IFUs; Competitor N* published unit definitions; Competitor Q* published unit definitions

Krishgen's Published Unit Conversion Reference

Krishgen's own KPGF-002 IFU publishes a conversion reference to help customers translate other suppliers' labeled activity into Krishzyme-equivalent units. NEB's unit matches Krishgen's 1:1; other suppliers require conversion.

Supplier (catalog #)	Labeled Conc.	Units / Vial	Krishzyme-Equiv. U/ml	1 Krishzyme µl =
Krishzyme™ (KPGF-002/003)	500,000 U/ml	15,000 U	500,000 U/ml	1 Krishzyme µl
Competitor N* (P****)	500,000 U/ml	15,000 U	500,000 U/ml	1 N* µl
Competitor Q* (E****)	5 U/ml	0.3 U	200,000 U/ml	2.5 Q* µl
Competitor S* (P****)	500 U/ml	50 U	90,000 U/ml	5.5 S* µl

Source: Krishgen KRISHZYME™ PNGase F IFU (Cat# KPGF-002, ver. 1.0) — conversion figures as published by Krishgen; not independently re-verified by Krishgen against each supplier's current documentation. KPGF-001 (glycerol-free) is labeled at 1,000,000 U/ml — double the KPGF-002/003 concentration shown above.

SIDE-BY-SIDE

Core Specs — Recombinant, Glycerol-Free Lines

Comparing Krishgen's glycerol-free line (KPGF-001) against each competitor's closest recombinant, glycerol-free equivalent.

	Krishgen KPGF-001	Competitor N* P****	Competitor Q* E****	Competitor P* V****
Purity	≥95% (SDS-PAGE)	≥95% (SDS-PAGE + intact ESI-MS)	Protease- & exoglycosidase-tested	≥95% (SDS-PAGE)
Concentration	1,000,000 U/ml	500,000 U/ml	5 U/ml (QA-Bio unit scale)	10,000 U/ml (10 U/μl)
Glycerol	Glycerol-free	Glycerol-free	Glycerol-free	Not glycerol-free (per published buffer)
Storage temp.	4°C	4°C	4°C	2–10°C
Shelf life (claimed)	12 months	24 months	≥24 months	Not publicly stated
Core α1-3 fucose	Not cleaved	Not cleaved	Not cleaved	Not cleaved

Source: Krishgen KPGF-001 catalog data; published specifications

Full Product-Line Matrix — Every SKU Compared

Supplier	Catalog #	Format	Glycerol	Notes
Krishgen	KPGF-001	Liquid	Free	Highest concentration among the three suppliers (1,000,000 U/ml)
Krishgen	KPGF-003	Liquid	Contains glycerol	Same chemistry as KPGF-002, packaged for Krishgen's Swift™ line
Krishgen	KPGF-002	Liquid	Contains glycerol	Cost-efficient routine deglycosylation
Competitor N*	P****	Liquid	Contains glycerol	—
Competitor N*	P****	Liquid	Free	—
Competitor N*	P****	Liquid	Contains glycerol	Recombinant
Competitor N*	P****	Liquid	Free	Recombinant
Competitor N*	P***	Liquid (kit)	Not stated	Rapid™ — 10-min protocol, see next slide
Competitor Q*	E***	Liquid	Free	—
Competitor Q*	E***	Liquid	Free	Recombinant

Source: Krishgen IFUs (KPGF-001/002/003); NEB published product pages (P0704/P0705/P0708/P0709/P0710); QA-Bio published product pages (E-PNG01/E-RPNG01).

Standard-Protocol Reaction Times Compared

	Krishgen Krishzyme™	Competitor N* (standard)	Competitor Q*
Denaturation step	100°C, 10 min	100°C (per protocol)	100°C, 5 min
Denaturing digestion	1–3 hours, 37°C	Typically 1–3 hours, 37°C	3 hours, 37°C
Non-denaturing digestion	Minutes at room temperature (native/serum glycoproteins)	Up to ~20 hours, 37°C (glycerol-free line)	≥24 hours, 37°C

These figures describe each supplier's standard-format PNGase F. NEB additionally offers a distinct rapid kit format — see next slide.

Source: Krishgen KRISHZYME™ PNGase F IFUs; published data

Spotlight: When Speed Is the Priority

Competitor N*'s Rxxx™ PNGase F (P****) is a dedicated, purpose-built kit format for minutes-scale digestion — how it compares to Krishgen's own rapid-capable chemistry.



Competitor N* Rxxx™ PNGase F (P****)

- ✓ Complete deglycosylation of antibodies & Fc-fusion proteins in ~10 minutes at 50°C
- ✓ Kit format — enzyme + 5X Rapid Buffer, 50 reactions per kit
- ✓ No SDS/detergent step — avoid Tween, Triton X-100, NP-40, and organic solvents
- ✓ Optional 80°C pre-denaturation for difficult substrates
- ✓ HPLC/MS-compatible; storage –20°C



Krishgen's Position

- ✓ Krishgen's enzyme also achieves minutes-scale digestion of native/serum glycoproteins at room temperature (per side-by-side testing)
- ✓ Not packaged as a distinct branded "rapid kit" with Competitor N*'s specific buffer system — same enzyme, standard format
- ✓ KPGF-001 (glycerol-free) is the highest-concentration liquid option among the three suppliers
- ✓ Higher labeled concentration (1,000,000 U/ml) supports larger bulk workflows per vial
- ✓ A strong fit whether the workflow calls for rapid native digestion or standard denaturing protocols

Source: NEB published specifications for Rapid™ PNGase F (P0710); Krishgen KRISHZYME™ PNGase F IFUs (KPGF-001/002/003).

Purity & Quality Control Compared

Krishgen	Competitor N*	Competitor Q*
✓ ≥95% purity by SDS-PAGE ✓ No contaminating exo-/endoglycosidase or protease activity ✓ Optimal activity & stability for up to 12 months	✓ ≥95% purity by SDS-PAGE and intact ESI-MS ✓ Guaranteed free of endoglycosidase F1, F2, F3 ✓ No protease activity detected after 20 h at 37°C (P0705) ✓ No cross-reactivity across 18 glycosidase/endoglycosidase activities tested	✓ Tested for protease contamination ✓ No detectable exoglycosidase contaminants ✓ Endoglycosidase F chromatographically removed

Source: Krishgen KRISHZYME™ PNGase F IFUs; published specifications

Storage & Shelf-Life Compared

	Krishgen Krishzyme™	Competitor N*	Competitor Q*
Storage Temperature	4°C	-20°C (glycerol) or 4°C (glycerol-free)	4°C (do not freeze)
Claimed Shelf Life	12 months	24 months	12–24 months
Freeze-Thaw Guidance	Avoid repeat freeze-thaw cycles	Avoid repeat freeze-thaw cycles	Store at 4°C, do not freeze



Disclosed gap: Competitor N and Competitor Q* no longer publish validated shelf-life windows than Krishgen's current 12-month claim. All three suppliers' Krishgen-comparable lines ship as refrigerated liquids — none currently offers ambient-tolerant shipping.*

Source: Krishgen KRISHZYME™ PNGase F IFUs; published specifications

A Limitation Shared by All Three Suppliers



PNGase F cannot cleave N-linked glycans in which the innermost GlcNAc is linked to a core α 1-3 fucose residue — a modification common in plant and insect glycoproteins. This is a property of the PNGase F enzyme class itself, not a formulation difference, and Krishgen, Competitor N*, and Competitor Q* all disclose the same limitation in their own documentation.

Labs working with plant- or insect-derived glycoproteins that carry core α 1-3 fucosylation should evaluate PNGase A instead, which is not affected by this substitution.

Source: Krishgen KRISHZYME™ PNGase F IFUs; NEB published specifications (P0704/P0708/P0709); QA-Bio published specifications (E-PNG01/E-RPNG01).

APPLICATIONS

Where Krishgen PNGase F Is Used



**Glycosylation
Screening**



**Glycosylation
Site Mapping**



**Glycan
Structure
Characterization**



**Protein
Trafficking
Studies**



**MW Estimation
&
Crystallography
Prep**

Suitable for monoclonal antibodies, Fc-fusion proteins, recombinant glycoproteins, and other N-linked glycoproteins across native and denaturing workflows.

SUMMARY

Battlecard: At a Glance

	Krishgen Krishzyme™	Competitor N*	Competitor Q*
Formats offered	3 liquid formats	4 standard liquid + 1 rapid kit	2 liquid
Unique format	Highest labeled concentration	Only sub-15-min rapid kit	—
Unit definition	Matches Competitor N*	Matches Krishgen	Different scale (convert first)
Highest concentration	1,000,000 U/ml	500,000 U/ml	5 U/ml (Q* own scale)
Claimed shelf life	12 months	24 months	12–24 months
Core α1-3 fucose	Not cleaved	Not cleaved	Not cleaved

Why Evaluate Krishgen PNGase F



Format flexibility

Glycerol-free and glycerol-stabilized liquid options, plus a dedicated Swift™ line, from a single vendor.



Unit-for-unit compatible with Competitor N*

Identical unit definition means straightforward like-for-like substitution.



High labeled concentration

1,000,000 U/ml on the glycerol-free (KPGF-001) line supports efficient bulk deglycosylation.



Direct regional support

Dedicated US/Europe and Asia/India contact lines with the manufacturer.

Request a sample vial or side-by-side evaluation protocol — sales1@krishgen.com

ORDERING

Ordering Information

Catalog #	Product	Pack Size	Concentration
KPGF-001-A	Krishzyme™ PNGase-F (glycerol-free), recombinant	50,000 U / 50 µl	1,000,000 U/ml
KPGF-001-B	Krishzyme™ PNGase-F (glycerol-free), recombinant	2 × 50,000 U / 50 µl	1,000,000 U/ml
KPGF-002-A	Krishzyme™ PNGase-F, recombinant	15,000 U / 30 µl	500,000 U/ml
KPGF-002-B	Krishzyme™ PNGase-F, recombinant	5 × 15,000 U / 30 µl	500,000 U/ml
KPGF-003-A	Krishzyme™ Swift™ PNGase-F, recombinant	15,000 U / 30 µl	500,000 U/ml
KPGF-003-B	Krishzyme™ Swift™ PNGase-F, recombinant	5 × 15,000 U / 30 µl	500,000 U/ml

RIUO: For Research & Industrial Use Only. Not for diagnostic or therapeutic use.

Global Manufacturing, Regional Support



Manufactured & Supported Directly

Krishgen BioSystems provides direct technical support and quality oversight for its PNGase F products, backed by dedicated regional teams.



Two Regional Contact Lines

Dedicated toll-free support for US/Europe customers and a direct line for Asia/India customers.



One Vendor, Three Chemistries

Glycerol-free, glycerol-stabilized, and Swift™ liquid formats — all from a single supplier, simplifying qualification and procurement.

US / Europe: toll-free +1 (888) 970-0827 · tel +1 (562) 568-5005

Asia / India: +91 (22) 4919-8700

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Let's Talk Deglycosylation Workflows

Request a sample vial of KRISHZYME™ PNGase F, or ask for a side-by-side evaluation protocol for your lab.

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