N-Glycosidase F Deglycosylation Kit and Endoglycosidase H Deglycosylation Kit

Fast and easy deglycosylation of glycan chains on glycoproteins

The N-Glycosidase F Deglycosylation Kit can be used to test for the existence of asparagine-linked glycan chains on glycoproteins. The kit enables a researcher to estimate the number of glycan chains bound to a protein. After the deglycosylation reaction, the protein can be analyzed by SDS-PAGE (Figure 14); a shift to a lower apparent molecular weight after the reaction indicates the existence of asparagine-linked glycan chains. The glycan, as well as the protein, moiety can also be used for further structural and functional analysis.

The new Endoglycosidase H Deglycosylation Kit is useful for testing the existence of "high mannose" type and "hybrid" type asparagine-linked glycan chains on purified glycoproteins. Like the N-Glycosidase F Deglycosylation Kit, it allows the estimation of the number of glycoprotein-bound glycan chains via deglycosylation reaction and SDS-PAGE (Figure 14). It serves also as a useful tool for the study of glycoproteins during their synthesis, processing, and secretion. In addition, the action of oligosaccharide processing inhibitors, such as castanospermine- and deoxymannojirimycin, on a glycoprotein can be followed.

For structural analysis of N-(asparagine)-linked carbohydrate chains of glycoproteins, chemical hydrazinolysis and enzymatic methods are most widely employed to cleave all common classes of oligosaccharides. During hydrazinolysis, however, the protein is destroyed, and degradation and modification of the released sugar chains have been observed. Enzymatic procedures are, therefore, the only methods allowing the structural analysis of the glycan and the protein part. Several endoglycosidases useful for these applications have been described; these enzymes are useful tools for the selective removal and characterization of the individual glycan types. Endoglycosidase H (Figure 15) and endoglycosidase F1 (not included in the kit) act only on "high mannose" type and "hybrid" type structures, while endoglycosidase F2 (not included in the kit) prefers "biantennary complex" type chains. N-glycosidase F is able to release all common classes of N-glycans from the protein backbone; the enzyme is not a glycosidase but rather an amidase, so it converts asparagine to aspartic acid.

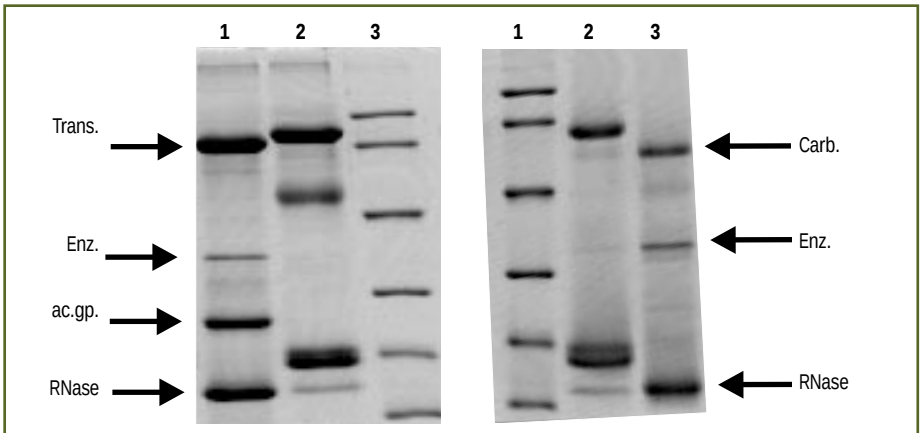

Figure 14 **Control glycoproteins** digested with (A) N-Glycosidase F Deglycosylation Kit; Lane 1: digested glycoproteins; Lane 2: undigested glycoproteins; Lane 3: protein molecular weight marker.
(B) Endoglycosidase H Deglycosylation Kit; Lane 1: protein molecular weight marker; Lane 2: undigested glycoproteins; Lane 3: digested glycoproteins.

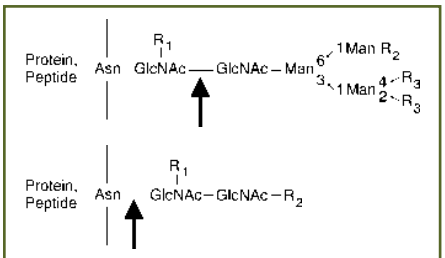

Figure 15 **Reaction principles of (A) Endoglycosidase H Deglycosylation Kit and (B) N-Glycosidase F Deglycosylation Kit.**

Both new kits are time saving (only 1 hour incubation time) and convenient (only 3 easy to perform working steps; all necessary buffers and controls are included). Unlike with chemical procedures, both the glycan part and the protein part can be analyzed after the reaction. Each kit has proven its reliability in a function test.

Product	Cat. No.	Pack Size
N-Glycosidase F Deglycosylation Kit	1 836 552	1 kit for 12 reactions
Endoglycosidase H Deglycosylation Kit	1 836 579	1 kit for 20 reactions

Also Available	Cat. No.	Pack Size
Endoglycosidase H	1 088 726 1 643 053	200 mU (200 µl) 500 mU (500 µl)
Endoglycosidase F1	1 636 197	3 U (60 µl)
Endoglycosidase F2	1 694 413	20 mU (50 µl)
O-Glycosidase	1 012 142 1 012 169	25 mU 100 mU
N-Glycosidase A	1 642 995	5 mU (0.1 ml)
N-Glycosidase F	1 365 185 1 365 193 1 643 045	20 units 50 units 250 units
DIG Glycan Detection Kit	1 142 372	1 kit
DIG Glycan Differentiation Kit	1 210 238	1 kit
DIG Glycan ELISA	1 460 366	1 kit
DIG Glycan/Protein Double Labeling Kit	1 500 783	1 kit