

## Product specification

<b>Product number:</b>	GL-011
<b>Product name:</b>	XN-IL lectin produced recombinantly in <i>E. coli</i> , unconjugated
<b>Form:</b>	Lyophilized powder
<b>Unit size:</b>	1 mg, 5 mg, 10 mg
<b>Sugar specificity:</b>	hyaluronan, low-sulfated heparan sulfate (see the detailed information below)
<b>Protein sequence:</b>	MYDWSGTVPKLEQQPTGLILKAGDVISIVAKGWVKYGYPDNYWAAPQGTLPKKPTLNDTLIAK IGNKTYGIGNGVLHKTVPVDGELILLFNDKPGSFGDNSGEFHVVIKIESRYDPDYLEEII
<b>Storage conditions:</b>	For long-term storage, keep the freeze-dried lectin at -20 °C. After dissolving, store the sample in the fridge.

**This product is for R&D use only. Not for human or animal use.**

### Basic information:

Name:	XN-IL	Molecular weight (monomer):	13692.6 Da
Organism:	<i>Xenorhabdus nematophila</i>	Extinction coefficient:	26930 M <sup>-1</sup> cm <sup>-1</sup>
Expression host:	<i>Escherichia coli</i>	Oligomeric state:	tetramer
Tags:	no		

### Carbohydrate specificity:

XN-IL binds hyaluronan and low- to medium-sulfated heparan sulfate ligands. In solution, the interaction leads to the precipitation of these GAGs. The binding occurs over a broad pH range (4-9) and is not significantly affected by the ionic strength of the buffer. The interaction is reversible, and the addition of EDTA disrupts the XN-IL/GAG complex. In contrast, XN-IL shows negligible binding to monosaccharides; lactose (disaccharide) is bound only weakly. XN-IL does not bind other glycosaminoglycans (chondroitin sulfate, high-sulfated heparan sulfate, heparin, keratan sulfate, dermatan sulfate) [1].

Ion dependency: Ca<sup>2+</sup>-dependent      Glycan array data available at [www.4glyco.cz](http://www.4glyco.cz)

### Stability:

The protein exhibits high thermal stability across a variety of buffers (pH range 4-10, sodium chloride concentration up to 1 M). As calcium ions in the binding sites are required for lectin activity, the addition of 0.1-0.5 mM CaCl<sub>2</sub> to the working buffer is recommended. EDTA and other chelating agents should be avoided as they remove Ca<sup>2+</sup> ion from the binding site and result in loss of lectin activity. After reconstitution in neutral pH buffers, the protein remains stable at 4 °C for weeks. The addition of sodium azide (0.02%) is recommended to prevent microbial growth.

T<sub>m</sub> = 90 °C (nanoDSF, 0.1 M HEPES, pH 7.0)

### Applications and biological effects:

XN-IL can be used in various applications, including lectin blotting, fluorescence microscopy, flow cytometry, and lectin histochemistry.

### References:

1. Korsák *et al*, *Carbohydr Polym*, 2026, doi: 10.1016/j.carbpol.2026.125557

## Guidelines for reconstitution of the lyophilized product

Wear protective gloves and clothing when handling the product. Respiratory protection should be worn when working with lyophilized lectin.

1. Allow the product to equilibrate to room temperature before opening the vial.
2. The product is offered in different amounts. For 1 mg, we recommend briefly centrifuging the vial and dissolving the whole lyophilisate. For 5 mg and 10 mg products, the desired quantity of freeze-dried protein can be transferred to a clean tube and dissolved there.
3. Add the desired solvent volume (see below for buffer recommendation), and allow the sample to reconstitute in the fridge (2 hours are recommended). If the undissolved particles are observed, let the sample dissolve at room temperature with gentle agitation, or for a prolonged period (overnight) in the fridge. Do not vortex.
4. Centrifuge the sample on a bench-top centrifuge (15 min, max speed) to remove the eventual insoluble material and check the concentration of the reconstituted lectin by measuring the absorbance at 280 nm (e.g., by Nanodrop).

In some instances, it may be challenging to dissolve the lyophilized powders completely, and the reconstitution efficiency may vary for different buffers. Therefore, 4GLYCO provides their customers with the output of testing their lectins in the most common solvents. The data can help customers select the appropriate buffer.

solvent	XN-IL dissolved
water (MilliQ)	86 %
20 mM Na acetate, pH 4.5	98 %
20 mM MES, 0.5 mM CaCl <sub>2</sub> , pH 6.0	98 %
20 mM Tris, 0.5 mM CaCl <sub>2</sub> , pH 7.5	100 %
50 mM Na borate, pH 8.5	100 %
20 mM Na acetate, 150 mM NaCl, pH 4.5	95 %
20 mM MES, 150 mM NaCl, 0.5 mM CaCl <sub>2</sub> , pH 6.0	100 %
20 mM Tris, 150 mM NaCl, 0.5 mM CaCl <sub>2</sub> , pH 7.5	100 %
20 mM Hepes, 150 mM NaCl, 0.5 mM CaCl <sub>2</sub> , pH 7.5	100 %
PBS	100 %

*The data were obtained by dissolving 0.5 mg of fresh, freeze-dried lectin in 500 µl of the buffers (2 hours, 4 °C), centrifuging, and measuring the lectin concentration in the supernatant spectrophotometrically.*

*Please note that the data are presented to compare different solvents. The absolute numbers may vary due to various factors.*