



Product Data Sheet

Wheat Germ Agglutinin-HRP conjugate (WGA-HRP)

Cat# 20363 **Wheat Germ Agglutinin-HRP conjugate** **Size:** 0.5 ml
Form: Liquid Powder

Lectins are proteins or glycoproteins of non-immune origin that agglutinate cells and/or precipitate complex carbohydrates. Lectins are capable of binding glycoproteins even in presence of various detergents. The agglutination activity of these highly specific carbohydrate-binding molecules is usually inhibited by a simple monosaccharide, but for some lectins, di, tri, and even polysaccharides are required. Lectins are isolated from a wide variety of natural sources, including seeds, plant roots and bark, fungi, bacteria, seaweed and sponges, mollusks, fish eggs, body fluids of invertebrates and lower vertebrates, and from mammalian cell membranes. The precise physiological role of lectins in nature is still unknown, but they have proved to be very valuable in a wide variety of applications in vitro, including:

1. Blood grouping and erythrocyte agglutination studies.
2. Mitogenic stimulation of lymphocytes.
3. Lymphocyte subpopulation studies.
4. Fractionation of cells and other particles.
5. Histochemical studies of normal and pathological conditions.

WGA is not blood group specific but has an affinity for N-acetyl- β -D-glucosaminyl residues and N-acetyl- β -D-glucosamine oligomers. WGA contains no protein-bound carbohydrate. Detects glycoproteins containing $\beta(1\rightarrow4)$ -N-acetyl-D-glucosamine when used with appropriate peroxidase substrate. Wheat germ agglutinin (WGA) At low pH (below pH 3), this lectin is a monomer (17 kDa by sedimentation velocity). However, it is a dimer (35 kDa by sedimentation velocity) at neutral to slightly acidic pH. By SDS-PAGE analysis, the monomers migrate as 18 kDa proteins. The absorption maximum (I_{max}) for the native dimer is 272 nm with a molar extinction coefficient (EM) of 1.09×10^5 . The pI varies by lectin isoform (isolectins I, IIa, III - pI = 8.7).

Purified WGA was coupled to HRP using proprietary methods.

The inhibition of agglutination activity by di-N-acetylglucosamine (GlcNAc)₂ on this wheat germ lectin is reported to be approximately 600 times greater than that of N-acetylglucosamine (GlcNAc). Tri-N-acetylglucosamine (GlcNAc)₃ is reported to be about 3000 times more inhibitory than GlcNAc.₆ This product is labeled with horseradish peroxidase. The peroxidase label allows use of this lectin in blotting procedures for the identification of sugar side-chains on proteins.

Agglutination activity: ≤ 40 μ g protein/ml agglutinates a 2% suspension of human erythrocytes after 1 hour incubation at 25°C.

HRP-activity: 50-200 units/mg (1 U corresponds to the amount of enzyme which oxidizes 1 μ mol ABTS) per minute at pH 6.0 and 25°C.

Form and Storage

WGA-HRP conjugate is supplied in PBS, pH 7.4, at ~0.5 mg/ml in liquid or **lyophilized** (0.5 ml). Reconstitute powder in PBS in 0.5 ml to prepare stock solution. Store at -20°C in suitable aliquots. Stability is ~6-12 months. Do not freeze and thaw.

Recommended Working Dilution for ELISA

Working dilution for the specific application should be determined by the investigator to obtain the best conditions. Working solution should be prepared immediately before use and diluted solution should be discarded.

Related Material available for ADI

MSDS: A Material Safety Data Sheet is not required for this product. The product does not contain any hazardous components above 1% or any carcinogens above 0.1% as defined in 29 CFR 1910.1200, the OSHA Hazard Communication Standard. The product contains natural purified proteins in a buffer containing 0.1% or less sodium azide. MSDS can be consulted for these items. Please note that although the product is defined as not hazardous, it is still advisable to follow prudent laboratory practices when handling laboratory reagents.

This material is sold for research purposes only and is not required to appear on the TSCA inventory.

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