Wheat Germ Agglutinin (WGA) probes

Products Information

Name :	**Wheat Germ Agglutinin – FITC (WGA-Fluorescein)** Triticum vulgare lectin (WGA) from wheat germ, FITC conjugated
Catalog Number :	FP-CE8070 5mg
Concentration:	May vary.
Buffer:	0.01M Phosphate - 0.15M NaCl, pH 7.2 - 7.4. Contains 0.05% sodium azide as a preservative.
Absorption / Emission :	$\lambda_{exc}\backslash\lambda_{em}$ = 495 / 517 nm FITC / Protein Ratio: (OD 495 / OD 280)

Name :	**Wheat Germ Agglutinin – SR101 (WGA-TR)** Triticum vulgare lectin (WGA) from wheat germ, SulfoRhodamine 101 (or T exas R) conjugated
Catalog Number :	FP-MS9541, 5mg
Buffer:	0.01M Phosphate - 0.15M NaCl, pH 7.2 - 7.4. Contains 0.05% sodium azide as a preservative.
Molecular Weight :	MW= 36 000 kDa (2 subunits of 18 000 kDa each)
Absorption / Emission :	$\lambda_{exc}\backslash\lambda_{em}$ = 596 / 615 nm

Name :	**Succinyl Wheat Germ Agglutinin – FluoProbes 647H (Succinyl WGA-FP 647H)** **Succinyl Triticum vulgare lectin (WGA) from wheat germ, FluoProbes 647H conjugated**
Catalog Number :	FP-B0E9E0, 1mg
Also available:	Native Wheat Germ Agglutinin (WHGA), FP-246122
Molecular Weight :	MW= 36 000 kDa (2 subunits of 18 000 kDa each)
Purification procedure:	Gel filtration performed after conjugation to remove free dye
Lectin Activity:	Less than 4mg/ml will agglutinate human type O erythrocytes. Less than 1 µg/ml will agglutinate neuraminidase treated erythrocytes.
Carbohydrate Specificity:	$(GlcNAc\text{-}\beta\text{-}(1,4)\text{-}GlcNAc)_{1\text{-}4}$>β-GlcNAc>Neu5Ac.
Inhibitor Carbohydrate:	GlcNAc β(1,4) GlcNAc β(1,4) GlcNAc>GlcNAc β(1,4) GlcNAc> GlcNAc>>sialic acid(Neu5Ac)>>GalNAc.

Storage:	Store liquid material frozen in aliquots in amber vials or covered with foil. Avoid freeze thaw cycles. Clarify by centrifugation. The liquid material is stable for at least 1 year when stored frozen in aliquots with 0.05%sodium azide added as a preservative.

Technical information | Directions for use (protocol, trouble shooting) | References | Related products

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Technical information

Wheat germ agglutinin (WGA) used in these products is a research grade affinity-purified wheat. This Lectin recognizes as main carbohydrate (N-acetyl glucosamine or chitobiose and its polymers. It thus recognizes structure common to many serum proteins, membrane glycoprotein, chitin, cartilage, glucosaminoglycans, and glycolipids and glycoproteins with sialic acid residues. Total activity of conjugate against an affinity matrix is >95%.

WGA conjugates are able to label live cells, or can label formaldehyde-fixed cells. They can survive after permeabilization with detergents, such as Triton™ X-100. WGA will label internal structures as well. if cells are already permeabilized. Thus, if cells are already permeabilized, alternative labeling should be performed with an antibody against a plasma membrane protein, or with lipophilic cyanine dye, such as DiI, that will label all cell membranes in live cells, not just plasma membranes.

Succinylated Wheat Germ agglutinin does not bind to sialic acid residues, unlike the native form, but retains its specificity toward *N*-acetylglucosamine.

Directions for use

Guidelines for use - General

Do not dilute at once the entire reconsituted solution at 10-20 micrograms/ml . Withdraw aliquots as needed with a micropipette and keep concentrated stock at 4°C. Dilute according to the particular application being used with the provided buffer.

General Procedure - Fluorescent Labeled Lectin

The following is a general Procedure given for your convenience, that should be optimized and adapted to your technique and conditions. See also below the Trouble-Shooting Guide.

Tissue Sections

1. Wash and block tissue section.
Do not use serum products, they contain glycoproteins which may lead to high levels of non specific background.
After blocking, rinse briefly with Buffer (See reverse side).
2. Dilute Fluorescent Labeled Lectin to desired concentration 20-100 µg/ml using Buffer.
3. Incubate tissue section with Fluorescent Labeled Lectin for 30 minutes in a moist chamber.
4. Wash tissue section with Buffer three times.
5. Examine tissue section with Fluorescent microscope.
Use appropriate filter.

Ref. M. Immbar et. al., (1973). Intnl. Journal of Cancer, 12, 93-99

Cell Suspension

1. Wash cells with Buffer (see reverse side.)
2. Collect cells by centrifugation.
3. Dilute Fluorescent Labeled Lectin to 100 □g/ml using Buffer.
4. Incubate approximately $1x10^6$ cells with 1 ml diluted Fluorescent Labeled Lectin for 15 minutes at room temperature or in a 37°C water bath.
5. Wash cells with Buffer three times using centrifugation.
6. Examine cells, with or without fixation with Fluorescent microscope. Use appropriate filter.

Ref. K. Phiss. (1977). Experimental Pathology, 14, S15

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Notes

Fluorochromes must be protected from light: light exposure during unproper storage may affect the reagent quality, and should be limited as possible also during operating because Fluorescein bleaches: Perform incubation, when practical, in a dark room or covered in foil. For a photostable fluorescent dye, use biotin labeled WGA and streptavidn-FluoProbes488.

Dye	λ Absorption max.	λ Emission max.
FITC	492 nm	517 nm
TRITC	554 nm	570 nm
SR101 / Texas Red™	596 nm	615 nm
FluoProbes 647H	653 nm	675 nm

Carbohydrate Inhibition

Inhibition of lectin binding may be accomplished by using one of two procedures:

A. Before incubating with Fluorescent Labeled Lectin, incubate section or cells with inhibitory carbohydrate for 30-60 minutes at room temperature. NOTE: Complete inhibition may NOT occur.

B. Preincubate diluted Fluorescent Labeled Lectin with inhibitory carbohydrate for 30-60 minutes at room temperature before applying to section or cells.

TROUBLE SHOOTING GUIDE

Problem	Cause	Solution
Weak or no Staining	1. Low concentration of specific oligosaccharide on sample.	Causes #1 - #3 a. Increase incubation time. b. Increase concentration (weak or no conjugate)
	2. Low concentration of lectin conjugate.	
	3. Insufficient incubation time.	
	4. Photobleaching	a. Avoid exposure to light.
High Background	1. Lectin conjugate is too concentrated.	a. Decrease concentration of Lectin conjugate. b. Shorten incubation times.
	2. Insufficient washing.	a. Perform multiple washings and prolong High washing time.
	3. Autofluorescent sample.	a. Use fluorochrome with different excitation and emission spectrum. b. Use a different lectin conjugate (enzyme or colloidal gold).
Unexpected Staining Pattern	Multiple causes	a. Perform control reactions b. Use other cytochemical technique to prove or disprove the findings.

References - WGA

- **Reyes A**.,et al. Chitin synthase III requires Chs4p-dependent translocation of Chs3p into the plasma membrane, *J. Cell Sci*., 120: 1998 - 2009 (2007)
- **Baurand A.** et al., ß-Catenin Downregulation Is Required for Adaptive Cardiac Remodeling, Circ. Res., 100: 1353 - 1362 (2007)
- **Nagata, Y.**, et.al. (1974) J.Biol.Chem. 249:3316.
- **Goldstein, I.J.**, et al., (1975) Biochem.Biophys.Acta. 405:53.
- **Rice, R.H.**, et.al. (1975) Biochem. 14:4093.

Caution - Legals

For R&D use only.

Not dangerous, not regulated product (MSD on inquire).

The aluminum seals have sharp edges and the vial itself may have cracks which can cause lacerations. Use caution when opening the vial.

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Related products

- ConA-FITC, FP-47496A
- WGA-biotin, FP-MS5730
- WGA-ConA, FP-MS9690
- Fluoro-Gel mounting medium, FP-AL2561
- DiI, FP-AM330A
- FP Membrane Marker 1-44 FX, FP-AN100A

[others conjugated lectins available]
Biotin, FITC or AP conjugated, from:

Abrus Precatorius Lectin (Jequirity Bean)	-APA-	Lens Culinaris Lectin (Lentil)	-LCH-
Aegopodium Podagraria Lectin (Ground Elder)	–APP-	Limax Flavus Lectin (Garden Slug)	-LFA-
Agaricus Bisporus Lectin (Mushroom)	-ABA-	Limulus Polyphemus Lectin (Horseshoe Crab)	-LPA-
Allium Sativum Lectin (Garlic)	-ASA-	Lotus Tetragonolobus Lectin (Asparagus Pea)	-LOTUS-
Anguilla Anguilla Lectin (Fresh Water Eel)	-AAA-	Lris Hybrid Lectin (Dutch Iris)	-IRA-
Arachis Hypogaea Lectin (Peanut)	-PNA-	Lycopersicon Esculentum Lectin (Tomato)	-LEA-
Artocarpus Integrifolia Lectin (Jackfruit) –Jacalin		Maackia Amurensis Lectin	-MAA-
Bauhinia Purpurea Lectin (Camel's Foot Tree)	-BPA-	Maclura Pomifera Lectin (Osage Orange)	-MPA-
Bauhinia Purpurea Lectin	-BPA-	Marasmium Oreades Agglutinin Lectin (Mushroom)	-MOA-
Bryonia Dioica Lectin (White Bryony)	-BDA-	Morniga G Lectin (Black Mulberry)	-MNA-G-
Calystega Sepiem Lectin (Hedge Bindweed Rhizomes)	–CALSEPA-	Morniga M Lectin (Black Mulberry)	-MNA-M-
Canavalia Ensiformis Lectin (Jackbean)	-CON A-	Narcissus Pseudonarcissus Lectin (Daffodil)	-NPA-
Cancer Antennarius Lectin (California Crab)	-CCA-	Phaseolus Lunatus Lectin (Lima Bean)	-LBA-
Caragana Arborescens Lectin (Pea Tree)	–CAA-	Phaseolus Vulgaris Lectin (Red Kidney Bean)	-PHA-E-
Cicer Arietinum Lectin (Chick Pea)	-CPA-	Phaseolus Vulgaris Lectin (Red Kidney Bean)	-PHA-L-
Colchicum Autumnale Lectin (Meadow Saffron)	-CA-	Phytolacca Americana Lectin (Pokeweed)	–PWM-
Cytisus Sessilifolius Lectin (Portugal Broom)	-CSA-	Pisum Sativum Lectin (Garden Pea)	-PEA-
Datura Stramonium Lectin (Jimson Weed)	-DSA-	Polygonatum Mulitiflorum Lectin (Commom Solomon's Seal)	-PMA-
Dioclea Grandiflora Lectin (Legume)	-DGL-	Polyporus Squamosus Lectin (Mushroom)	-PSL-
Dolichos Biflorus Lectin (Horse Gram)	-DBA-	Ricinus Communis Lectin (Castor Bean)	-RCA-I-
Erythrina Cristagalli Lectin (Coral Tree)	-ECA-	Ricinus Communis Lectin (Castor Bean)	-RCA-II-
Euonymus Europaeus Lectin (Spindle Tree)	-EEA-	Triticum Vulgare Lectin (Wheat Germ)	-WGA-
Galanthus Nivalis Lectin (Snowdrop Bulb)	-GNA-	Tulipa Sp. Lectin (Tulip)	-TL-
Glechoma Hederacea Lectin (Ground Ivy)	-GHA-	Ulex Europaeus Lectin (Gorse)	
Glycine Max Lectin (Soybean)	-SBA-	Ulex Europaeus Lectin (Gorse)	
Griffonia Simplicifolia Lectin	-GS-I-	Urtica Dioica Lectin (Stinging Nettle)	-UDA-
Griffonia Simplicifolia Lectin	-GS-II-	Vicia Fava Lectin (Fava Bean)	-VFA-
Helix Aspersa Lectin (Garden Snail)	-HAA-	Vicia Villosa Lectin (Hairy Vetch)	-VVA-
Helix Pomatia Lectin (Edible Snail)	-HPA-	Viscum Album Lectin (Mistletoe)	-VAA-
Hippeastrum Hybrid Lectin (Amaryllis)	-HHA-	Wisteria Floribunda Lectin (Japanese Wisteria)	-WFA-

I.e. ConA-FITC, FP-47496A

Ordering information

Catalog size quantities and prices may be found at http://www.interchim.com

For any information, please ask : FluoProbes® / Interchim; Hotline : +33(0)4 70 03 73 06

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