

# Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

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# Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

# Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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# **Product Information**

# Wheat Germ Agglutinin (WGA) Conjugates

#### **Product List**

29021-1         CF®350 WGA         1 mg         350/450           29021         5 x 1 mg         350/450           29027-1         CF®405S WGA         1 mg         411/431           29027         CF®405M WGA         1 mg         416/452           29028         CF®405M WGA         1 mg         490/516           29022-1         CF®488A WGA         5 x 1 mg         490/516           29022-1         CF®488A WGA         5 x 1 mg         531/552           29064-1         CF®532 WGA         1 mg         531/552           29076-1         CF®555 WGA         1 mg         554/568           29077-1         CF®568 WGA         1 mg         562/584           29077-1         CF®568 WGA         1 mg         593/615           29023-1         CF®594 WGA         5 x 1 mg         593/615           29024-1         CF®633 WGA         5 x 1 mg         629/650           29024-1         CF®640R WGA         5 x 1 mg         642/663           29029-1         CF®680 WGA         5 x 1 mg         681/698           29029-1         CF®680 WGA         1 mg         680/701           29059-1         CF®680R WGA         5 x 1 mg         770/797	Product Lis			
29021	Cat. No.	Conjugate	Unit Size	Ex/Em* (nm)
29021         5 x 1 mg           29027-1         CF®405S WGA         1 mg         411/431           29028         CF®405M WGA         1 mg         416/452           29028         5 x 1 mg         490/516           29029         CF®488A WGA         1 mg         490/516           29020         29064-1         CF®532 WGA         5 x 1 mg         531/552           29076-1         29076-1         1 mg         554/568         5 x 1 mg           29077-1         29077-1         CF®568 WGA         5 x 1 mg         562/584           29023-1         29023-1         1 mg         593/615           29024-1         29024-1         1 mg         629/650           29024-1         29024-1         1 mg         629/650           29025-1         29029-1         2F®680 WGA         5 x 1 mg         642/663           29029-1         2F®680 WGA         5 x 1 mg         681/698           29025-1         2F®680R WGA         5 x 1 mg         680/701           29059-1         2F®770 WGA         1 mg         770/797           29073         HRP WGA         1 mg         N/A           29095-1         Ripitin WGA         1 mg         N/A <td>29021-1</td> <td>CE@3E0 WCA</td> <td>1 mg</td> <td rowspan="2">350/450</td>	29021-1	CE@3E0 WCA	1 mg	350/450
29027   CF®405S WGA   5 x 1 mg   411/431     29028   CF®405M WGA   5 x 1 mg     29028   CF®405M WGA   5 x 1 mg     29022   CF®488A WGA   5 x 1 mg     29022   CF®488A WGA   5 x 1 mg     29064-1	29021	CL@330 MGA	5 x 1 mg	
29027         5 x 1 mg           29028-1         CF®405M WGA         1 mg         416/452           29022-1         CF®488A WGA         1 mg         490/516           29022         CF®488A WGA         1 mg         490/516           29022         29064-1         1 mg         531/552           29064         29064         1 mg         531/552           29076-1         29076-1         1 mg         554/568           29077-1         29077-1         1 mg         562/584           29077-1         29023-1         1 mg         593/615           29023         29024-1         1 mg         593/615           29024-1         29024-1         1 mg         629/650           29024-1         29026-1         1 mg         642/663           29026-1         29026-1         1 mg         642/663           29029-1         29029-1         1 mg         681/698           29025-1         29025-1         290680R WGA         1 mg         680/701           29059-1         29059-1         1 mg         770/797           29073         HRP WGA         1 mg         N/A           29095-1         Biotin WGA         1 mg <td< td=""><td>29027-1</td><td>CERANSS WGA</td><td>1 mg</td><td rowspan="2">411/431</td></td<>	29027-1	CERANSS WGA	1 mg	411/431
29028         CF®405M WGA         5 x 1 mg         416/452           29022-1         CF®488A WGA         1 mg         490/516           29022-1         CF®488A WGA         1 mg         5 x 1 mg           29064-1         CF®532 WGA         5 x 1 mg         531/552           29076-1         CF®555 WGA         1 mg         554/568           29077-1         CF®568 WGA         1 mg         562/584           29077-1         CF®594 WGA         5 x 1 mg         593/615           29023-1         CF®594 WGA         5 x 1 mg         593/615           29024-1         CF®633 WGA         1 mg         629/650           29024-1         CF®640R WGA         5 x 1 mg         642/663           29029-1         CF®640R WGA         1 mg         681/698           29029-1         CF®680 WGA         1 mg         680/701           29025-1         CF®680R WGA         1 mg         680/701           29059-1         CF®770 WGA         1 mg         770/797           29073         HRP WGA         1 mg         N/A	29027	CF®4033 WGA	5 x 1 mg	
29028         5 x 1 mg           29022-1         CF®488A WGA         1 mg           29022         5 x 1 mg         490/516           29024         5 x 1 mg         531/552           29076-1         CF®532 WGA         1 mg         554/568           29076-1         CF®555 WGA         1 mg         554/568           29077-1         CF®568 WGA         1 mg         562/584           29077         29023-1         1 mg         593/615           29023         29024-1         1 mg         593/615           29024-1         CF®633 WGA         1 mg         629/650           29024-1         CF®640R WGA         1 mg         642/663           29026-1         CF®640R WGA         1 mg         681/698           29029-1         CF®680 WGA         1 mg         680/701           29025-1         CF®680R WGA         1 mg         680/701           29059-1         CF®770 WGA         1 mg         770/797           29073         HRP WGA         1 mg         N/A           29095-1         Biotin WGA         1 mg         N/A	29028-1	CE®405M W.CA	1 mg	416/452
29022         CF®488A WGA         5 x 1 mg         490/516           29064-1         CF®532 WGA         1 mg         531/552           29076-1         CF®555 WGA         5 x 1 mg         554/568           29077-1         CF®568 WGA         1 mg         562/584           29077         29023-1         CF®594 WGA         1 mg         593/615           29023         CF®633 WGA         1 mg         629/650           29024-1         CF®633 WGA         1 mg         629/650           29026-1         CF®640R WGA         1 mg         642/663           29029-1         CF®680 WGA         5 x 1 mg         681/698           29025-1         CF®680R WGA         1 mg         680/701           29059-1         CF®770 WGA         1 mg         770/797           29073         HRP WGA         1 mg         N/A           29095-1         Biotin WGA         1 mg         N/A	29028	CF®403WI WGA	5 x 1 mg	
29022         5 x 1 mg           29064-1         CF®532 WGA         1 mg         531/552           29076-1         CF®555 WGA         1 mg         554/568           29077-1         CF®568 WGA         5 x 1 mg         562/584           29077-1         CF®568 WGA         1 mg         562/584           29023-1         CF®594 WGA         5 x 1 mg         593/615           29023         5 x 1 mg         593/615           29024-1         CF®633 WGA         1 mg         629/650           29024-1         CF®640R WGA         1 mg         642/663           29026-1         29029-1         CF®680 WGA         5 x 1 mg         681/698           29029-1         29029-1         CF®680R WGA         1 mg         680/701           29025-1         29059-1         CF®770 WGA         1 mg         770/797           29073         HRP WGA         1 mg         N/A           29095-1         Biotin WGA         1 mg         N/A	29022-1	CF®488A WGA	1 mg	490/516
29064         CF®532 WGA         5 x 1 mg         531/552           29076-1         CF®555 WGA         1 mg         554/568           29077-1         CF®555 WGA         1 mg         562/584           29077-1         CF®568 WGA         5 x 1 mg         562/584           29077-1         CF®568 WGA         1 mg         593/615           29023-1         CF®633 WGA         1 mg         629/650           29024-1         CF®633 WGA         1 mg         642/663           29026-1         CF®640R WGA         5 x 1 mg         642/663           29029-1         CF®680 WGA         5 x 1 mg         681/698           29025-1         CF®680R WGA         1 mg         680/701           29059-1         CF®770 WGA         1 mg         770/797           29073         HRP WGA         1 mg         N/A           29095-1         Biotin WGA         1 mg         N/A	29022		5 x 1 mg	
29064         5 x 1 mg           29076-1         CF®555 WGA         1 mg         554/568           29077-1         CF®568 WGA         1 mg         562/584           29077-1         CF®568 WGA         5 x 1 mg         562/584           29077-1         CF®594 WGA         1 mg         593/615           29023-1         CF®694 WGA         1 mg         629/650           29024-1         CF®633 WGA         1 mg         629/650           29024-1         CF®640R WGA         1 mg         642/663           29026-1         29029-1         1 mg         681/698           29029-1         CF®680 WGA         5 x 1 mg         680/701           29025-1         CF®680R WGA         1 mg         680/701           29059-1         CF®770 WGA         1 mg         770/797           29073         HRP WGA         1 mg         N/A           29095-1         Biotin WGA         1 mg         N/A	29064-1	CF®532 WGA	1 mg	531/552
29076  29077  29077  29077  29023  CF®594 WGA  29024  29024  CF®633 WGA  29026  CF®640R WGA  29029  CF®680 WGA  29029  CF®680 WGA  29029  CF®680R WGA  29025  CF®680R WGA  29025  CF®770 WGA  CF®770 WGA  Sx 1 mg  554/568  5 x 1 mg  562/584  562/584  593/615  593/615  629/650  5 x 1 mg  629/650  5 x 1 mg  642/663  5 x 1 mg  642/663  5 x 1 mg  681/698  680/701  770/797  770/797  29059  HRP WGA  1 mg  5 x 1 mg  770/797  770/797  1 mg  770/797  770/797  1 mg  770/797  770/797	29064		5 x 1 mg	
29076         5 x 1 mg           29077-1         CF®568 WGA         1 mg         562/584           29077         5 x 1 mg         593/615           29023-1         CF®594 WGA         5 x 1 mg         593/615           29024-1         CF®633 WGA         1 mg         629/650           29024-1         29026-1         1 mg         642/663           29026-1         29026-1         1 mg         642/663           29029-1         29029-1         1 mg         681/698           29029-1         29029-1         1 mg         680/701           29025-1         29059-1         1 mg         680/701           29059-1         29059-1         1 mg         770/797           29073-1         HRP WGA         1 mg         N/A           29095-1         Biotin WGA         1 mg         N/A	29076-1	OF SEEF MOA	1 mg	554/568
29077	29076	CF®555 WGA	5 x 1 mg	
29077         5 x 1 mg           29023-1         CF®594 WGA         1 mg         593/615           29023         5 x 1 mg         593/615           29024-1         CF®633 WGA         1 mg         629/650           29024-1         29026-1         1 mg         642/663           29026-1         29029-1         1 mg         681/698           29029-1         29029-1         1 mg         681/698           29025-1         29025-1         1 mg         680/701           29059-1         29059-1         1 mg         770/797           29073         HRP WGA         1 mg         N/A           29095-1         Biotin WGA         1 mg         N/A	29077-1	CERES WCA	1 mg	562/584
29023	29077	CF®500 WGA	5 x 1 mg	
29023         5 x 1 mg           29024-1         CF®633 WGA         1 mg         629/650           29024         5 x 1 mg         629/650           29026-1         T mg         642/663           29029-1         T mg         642/663           29029-1         T mg         681/698           29029-1         T mg         681/698           29025-1         T mg         680/701           29025-1         T mg         680/701           29059-1         T mg         770/797           29073         HRP WGA         1 mg         N/A           29095-1         Biotin WGA         1 mg         N/A	29023-1	OF SECULIARION	1 mg	593/615
29024 CF®633 WGA 5 x 1 mg 629/650 29026 1 Tmg 642/663 29029 1 Tmg 642/663 29029 1 Tmg 681/698 29029 1 Tmg 681/698 29025 1 Tmg 681/698 29025 29059 1 Tmg 680/701 29059 29059 1 Tmg 770/797 29059 29073 HRP WGA 1 mg N/A 29095-1 Biotin WGA 1 mg N/A	29023	CF®594 WGA	5 x 1 mg	
29024         5 x 1 mg           29026-1         CF®640R WGA         1 mg         642/663           29029-1         29029-1         1 mg         681/698           29029-1         29029-1         1 mg         681/698           29025-1         29025-1         1 mg         680/701           29059-1         29059-1         1 mg         770/797           29073         HRP WGA         1 mg         N/A           29095-1         Biotin WGA         1 mg         N/A	29024-1	OFECSS MICA	1 mg	629/650
29026         CF®640R WGA         5 x 1 mg         642/663           29029-1         CF®680 WGA         1 mg         681/698           29029         5 x 1 mg         681/698           29025-1         CF®680R WGA         1 mg         680/701           29025         5 x 1 mg         680/701           29059-1         CF®770 WGA         1 mg         770/797           29073         HRP WGA         1 mg         N/A           29095-1         Biotin WGA         1 mg         N/A	29024	CF®633 WGA	5 x 1 mg	
29026     5 x 1 mg       29029-1     29029-1       29029     5 x 1 mg       681/698       29025-1     1 mg       29025     5 x 1 mg       29059-1     5 x 1 mg       29059     1 mg       770/797       29073     1 mg       8iotin WGA     1 mg       N/A	29026-1	0590400 14/04	1 mg	642/663
29029         CF®680 WGA         5 x 1 mg         681/698           29025-1         29025         1 mg         680/701           29059-1         29059-1         1 mg         770/797           29073         HRP WGA         1 mg         N/A           29095-1         Biotin WGA         1 mg         N/A	29026	CF®640R WGA	5 x 1 mg	
29029     5 x 1 mg       29025-1     29025       29059-1     5 x 1 mg       29059     1 mg       680/701       29059-1     1 mg       29073     HRP WGA     1 mg       N/A       29095-1     N/A	29029-1	CERCOO W.C.A	1 mg	681/698
29025	29029	CF®080 WGA	5 x 1 mg	
29025     5 x 1 mg       29059-1     1 mg       29059     5 x 1 mg       29073     HRP WGA       1 mg     N/A       29095-1     1 mg       Biotin WGA     1 mg       N/A	29025-1	OFECOOD WC	1 mg	680/701
29059 CF®770 WGA 770/797 29073 HRP WGA 1 mg N/A 29095-1 Biotin WGA 1 mg N/A	29025	CF®680R WGA	5 x 1 mg	
29059     5 x 1 mg       29073     HRP WGA     1 mg     N/A       29095-1     Biotin WGA     1 mg     N/A	29059-1	050770 1410 4	1 mg	770/797
29095-1 Biotin WGA 1 mg N/A	29059	CF®//0 WGA	5 x 1 mg	
Biotin WGA N/A	29073	HRP WGA	1 mg	N/A
BIOTIN WGA N/A	29095-1	Disting MOA	1 mg	N/A
29095 5 x 1 mg	29095	Biotin WGA	5 x 1 mg	

<sup>\*</sup> In PBS, pH 7.4

## Storage and Handling

Store at -20°C, protected from light. Product is stable for at least 12 months from date of receipt when stored as recommended.

#### **Product Description**

Wheat germ agglutinin (WGA) binds selectively to N-acetylglucosamine and sialic acid residues. WGA is commonly used to label glycoproteins for imaging of the plasma membrane in live or fixed cells or for western blotting. WGA also is useful as a retrograde or anterograde neuronal tracer. Staining with WGA conjugates may be tissue-type and cell-type dependent. WGA also labels gram-positive bacteria and yeast bud scars.

Biotium's next-generation fluorescent CF® Dyes offer advantages in brightness and photostability compared to other fluorescent dyes. We also offer HRP WGA, which can be used with colorimetric HRP substrates or fluorescent tyramide substrates.

## **Experimental Protocols**

## Conjugate reconstitution

To prepare a 1 mg/mL stock solution, dissolve 1 mg of lyophilized WGA conjugate in 1 mL of water. The lyophilized product contains enough PBS to yield a concentration of 1X PBS after reconstitution. The stock solution can be stored at 2-8°C for up to a week or stored in aliquots at -20°C for 12 months or longer. Sodium azide may be added to protect from bacterial contamination during long-term storage; however, azide should not be used with HRP conjugates. Protect fluorescent conjugates from light.

#### Recommended solutions for staining cells

#### Bacterial cells:

0.15 M NaCl or 3 M KCl.

## Yeast cells:

Synthetic defined complete (SDC) media, or Hank's balanced salt solution (HBSS) without phenol red. YPD media is not recommended due to autofluorescence.

#### Mammalian cells:

For fixed cells, PBS, or Hank's balanced salt solution (HBSS) without phenol red can be used. For live adherent cells, HBSS with calcium and magnesium is recommended as it maintains cell morphology. We have also performed staining in complete culture medium with serum with good results.

# Protocols for staining live cells and fixed cells

These are general protocols for staining cells with WGA conjugates. Optimization for your tissue or cells of interest may be required. While WGA is commonly used for tissue staining, its localization is highly tissue-dependent, so it may not stain cell boundaries in your tissue of interest.

# Materials required but not provided

- Paraformaldehyde, 4% in PBS (Cat. No. 22023).
- · Permeabilization Buffer (Cat. No. 22016).

# 1. Staining live cells

- 1. Wash cells 2X with a recommended buffer.
- Prepare a staining solution of WGA in a recommended buffer. Staining concentration may require optimization. Recommended starting concentration is 50-100 ug/mL for bacterial and yeast cells, and 1-5 ug/mL for mammalian cells

 Incubate cells with WGA staining solution, protected from light, for 10-30 minutes at room temperature for bacterial cells or 10 minutes at room temperature for mammalian cells.

**Note:** With longer incubation times, increased intracellular staining may be observed in mammalian cells.

Wash cells 2X with the same buffer or medium used for staining.

#### Notes:

- a. Washing with buffer such as HBSS or PBS is recommended before fixation; if free WGA is present during fixation and permeabilization, WGA will stain both cell surface and organelles in the secretory pathway. WGA staining is compatible with paraformaldehyde (PFA) and solvent fixation.
- b. For live cell imaging, washing may be optional if live cells are being imaged by confocal, as the free WGA in solution may not interfere with imaging if you are focused on the cells. For epifluorescence, washing is highly recommended as free WGA can result in high background.
- Image cells on a microscope using the appropriate filter set (see product table for peak excitation and emission). Staining also can be detected by flow cytometry in the appropriate detection channel.

#### 2. Staining fixed cells

WGA staining is compatible with paraformaldehyde (PFA) fixation, solvent fixation, or FFPE tissue staining. However, using alcohol or solvent fixatives (like methanol or acetone) will cause more intracellular staining compared to PFA. Permeabilization of cells before staining will also cause WGA to label glycoproteins in the plasma membrane and intracellular compartments such as Golgi structures. Therefore, for cell surface labeling, we recommend using PFA fixation and staining with WGA prior to permeabilization.

- Remove cell culture medium from live cells and rinse 3X with HBSS, PBS, or similar buffer
- 2. Fix cells with 4% PFA in PBS for 20 minutes at room temperature.

**Note**: Avoid fixing the cells for longer than 20 minutes, as this can result in increased intracellular staining. Other fixation conditions (such as fixation with 2% PFA, or fixation at 4°C) may be optimal for preserving membrane integrity in your cell type.

- 3. Wash cells 3X with PBS.
- Stain cells with CF® Dye WGA for 10-30 minutes at room temperature and protected from light. Recommended starting concentration is 1-5 ug/mL.
- 5. Wash cells 3X with PBS.
- Permeabilize cells with 0.1% Triton® X-100 in PBS (or use Biotium's Permeabilization Buffer, Cat. No. 22016) for 30 minutes at room temperature and protected from light.
- 7. Wash cells 3X with PBS.
- 8. Proceed with immunofluorescence staining.

**Note:** We recommend omitting detergent from subsequent blocking and washing steps, if possible, to minimize potential redistribution or loss of WGA conjugate signal.

 Image cells on a microscope using the appropriate filter set (see product table for peak excitation and emission).

### **Related Products**

Cat. No.	Product	
00070- 00079	Cholera Toxin Subunit B CF® Dye Conjugates	
29015 29080	CF® Dye Concanavalin A (Con A)	
29060- 29063	CF® Dye PNA Lectin (Arachis hypogaea)	
29096- 29101	Datura Stramonium Lectin (DSL)	
29102- 29107	Lycopersicon Esculentum (Tomato) Lectin (LEL, TL)	
29108- 29113	Ulex Europaeus Agglutinin I (UEA I)	
29114- 29119	Phaseolus Vulgaris Leucoagglutinin (PHA-L)	
30021- 30024	CellBrite® Cytoplasmic Membrane Dyes	
30088- 30090	CellBrite® Fix Membrane Stains	
30105- 30109	CellBrite® Steady Membrane Staining Kits	
30092- 30104	MemBrite® Fix Cell Surface Staining Kits	
29067	Calcofluor White	
40043	DAPI, 10 mg/mL in Water	
40046	Hoechst 33342, 10 mg/mL in Water	
32000-1	Live Bacterial Gram Stain Kit	
32019, 32020	Bacterial Viability and Gram Stain Kit	
30088- 30090	BactoView™ Viability Kits	
40107- 40113	BactoView™ Dead Stains, 500X in Water	
30027	Viability/Cytotoxicity Assay Kit for Bacterial Live and Dead Cells	
30015	DAB Substrate Kit	
92170- 96066	CF® Dye Tyramides	
22027	Ready-to-Use Tyramide Amplification Buffer	
22016	Permeabilization Buffer	
22023	Paraformaldehyde, 4% in PBS, Ready-to-Use Fixative	

Please visit our website at <a href="www.biotium.com">www.biotium.com</a> for information on our life science research products, including environmentally friendly EvaGreen® qPCR master mixes, fluorescent CF® Dye antibody conjugates and reactive dyes, apoptosis reagents, fluorescent probes, and kits for cell biology research.

CF® Dyes are covered by pending US and international patents. Triton® is a registered trademark of The Dow Chemical Company.

Materials from Biotium are sold for research use only, and are not intended for food, drug, household, or cosmetic use.