

MigraPrep™ Dye

Wheat germ agglutinin (WGA)

EL002-488 / EL002-555 / EL002-647

Instruction manual

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Wheat germ agglutinin (WGA)

Catalog number	Pack size
EL002-488	100 µL
EL002-555	100 µL
EL002-647	100 µL

This product is designed for scientific research and is not intended for clinical diagnosis. Read the detailed risk and liability statement in this manual carefully before using the product.

Product overview

In 2019, Professor Li Yu's laboratory at Tsinghua University found that wheat germ agglutinin dye effectively labels migrasome membranes (Chen L. et al., 2019). The WGA dyes from Migrasome Therapeutics can stain migrasomes produced by cultured cells for fluorescence microscopy of migrasomes in situ or after isolation.

Catalog number	Excitation	Emission
EL002-488	495 nm	519 nm
EL002-555	555 nm	580 nm
EL002-647	650 nm	665 nm

Product contents

Component	EL002-488	EL002-555	EL002-647
WGA	100 µL	100 µL	100 µL
Instruction manual	1 copy	1 copy	1 copy

Storage and shipping

Shipping temperature: 4°C. Store at 4°C protected from light. Shelf life: 12 months.

Procedure

1. In situ cell staining

1-1. Seed an appropriate number of cells in a confocal imaging dish precoated with Fn (fibronectin) or extracellular matrix F (catalog no. EL001).

Determine the optimal Fn concentration and the cell density for migrasome production in advance. This density should be substantially lower than the optimal density for cell culture. See Precaution 3.

1-2. Culture overnight for 12-16 h under the appropriate cell culture conditions.

Determine the optimal cell culture conditions in advance. See Precaution 4.

1-3. Use the dye at a dilution of 1:100 to 1:500. Add it directly to the culture medium for live-cell staining, or stain after fixation with 4% paraformaldehyde. Glutaraldehyde fixation produces red autofluorescence, and methanol fixation disrupts migrasome structure. After fixation, wash once with PBS to remove the fixative, then add PBS containing the dye.

1-4. Protect the samples from light and stain for approximately 10-15 min. Use an incubator for live cells or room temperature for fixed cells, then examine by microscopy.

2. Staining purified migrasomes

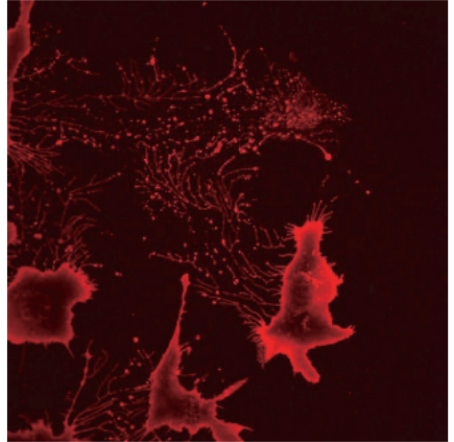
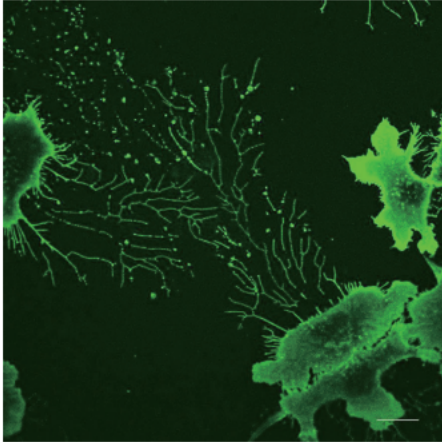
2-1. Prepare a 1:50-1:100 working solution in PBS.

2-2. Mix the working solution with the purified migrasome sample at a ratio of 1:1. Place a 1-2 μ L droplet in a confocal imaging dish. Protect the sample from light and stain for 15-30 min at room temperature or overnight at 4°C, then examine by microscopy.

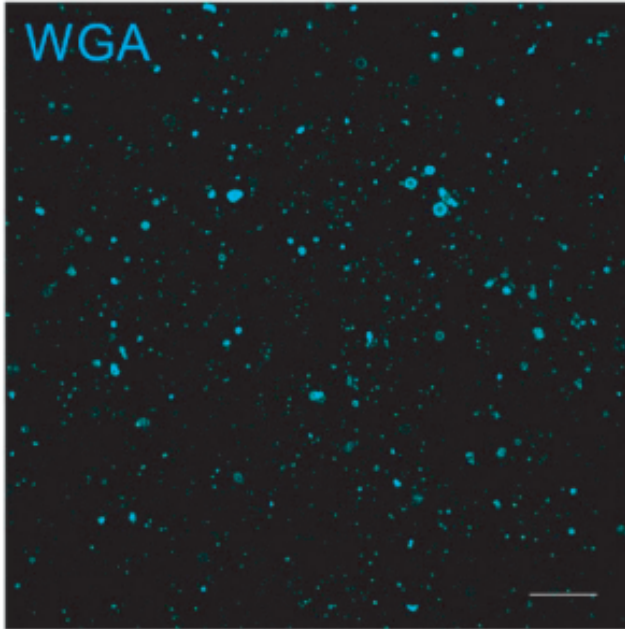
To prevent the sample droplet from drying, water may be added around the edge of the dish and the dish sealed with sealing film.

Representative results

Fluorescence microscopy



Confocal micrographs of migrasomes produced in situ by L929 cells and stained at 1:500 with EL002-488 (left) or EL002-555 (right). Cells were seeded in confocal imaging dishes precoated with extracellular matrix F (catalog no. EL001) at 1:300. After 16 h, cells were fixed with PFA and stained. Migrasome structures are clearly visible.



Confocal micrograph of migrasomes derived from total human blood cells stained with EL002-647 at 1:500. Scale bar: 10 μm .

WGA: wheat germ agglutinin.

Precautions

1. This product can also be used to stain other cell membrane structures.
2. Migratory cell lines and primary cells can produce migrasomes. Production depends on the properties of the cells and must be evaluated experimentally. Adherent cells with high migration capacity are recommended, as are cells whose adhesion and migration increase after overexpression of genes that promote migrasome production, such as Tspan4. Suspension cells are not recommended, although extracellular matrix treatment or gene editing may be tested to promote adhesion.
3. Migrasomes form during cell migration, so cells should not be too dense. Based on our experience, maintain approximately 10%-20% confluence when observing migrasomes, with a lower density for cells that migrate faster. Excessive density impairs both migrasome production and observation.
4. Control the migrasome production time carefully. Incubation that is too short or too long reduces production efficiency. Based on our experience, the recommended production time is approximately 12-16 h.
5. Migrasome production depends on interactions between the cell surface and the culture substrate. Different extracellular matrices may produce different migrasome yields for a given cell type.

Important risk and liability statement

This product is for research use only. It has been designed and manufactured in accordance with the standards and regulatory requirements applicable to research reagents. Read this manual carefully before use and comply with all applicable requirements for biosafety, law, ethics, and privacy, including, but not limited to, the following:

- **Compliance:** Do not use this product for clinical diagnosis, treatment, or any other medical purpose.
- **Biosafety:** Take appropriate biosafety measures to prevent infection and strictly follow the procedures for handling and storing biohazardous materials.
- **Ethics and privacy:** Sample collection must comply with all relevant ethical review requirements, protect personal privacy, and be supported by the appropriate informed consent.
- **Cross-contamination:** Follow this manual to prevent sample cross-contamination and ensure accurate experimental results.
- **Storage and stability:** Store the product correctly to maintain its stability and effectiveness. Storage outside the specified conditions may reduce performance.
- **Waste disposal:** Dispose of used reagents and samples safely in accordance with local regulations.
- **Performance limitations:** Product performance and limitations are described in this manual. The company accepts no responsibility for use outside these instructions.

The company accepts no legal liability for any direct or indirect consequences of improper use of this product or failure to comply with applicable regulations. Contact customer service if you have questions or require further information.

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