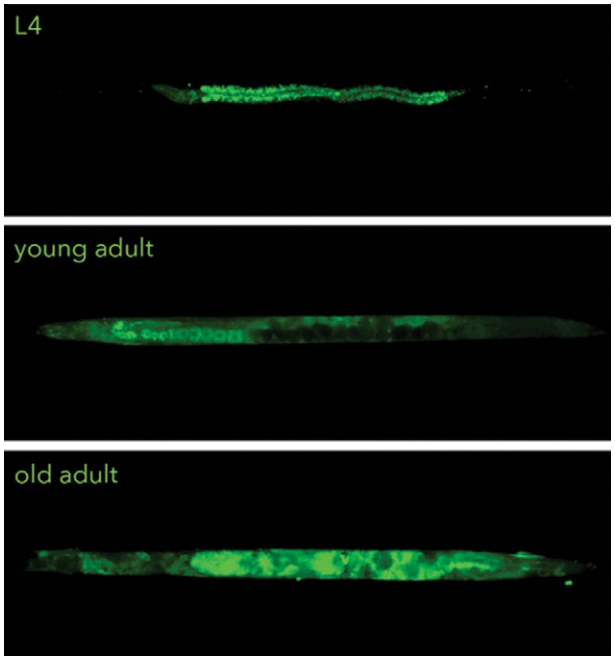
NemaMetrix

RediStain™ WormDye Lipid Green Reagent

SKU: DYE9439 SIZE: 500 UL (100 USES)

<-20°C		1.34mg/mL
STORAGE UPON RECEIPT	**PROTECT FROM LIGHT**	**PACKAGED CONCENTRATION**
493nm	503nm	DMSO
EMISSION	**EXCITATION**	**SOLUTE**



RediStain™ WormDye Lipid Green reagent staining of various life stages in live *C. elegans*.

Description

RediStain™ WormDye Lipid Green reagent is an intrinsically lipophilic fluorophore that can be used to effectively track lipids inside *C. elegans*. RediStain™ WormDye Lipid Green reagent is chemically identical to Bodipy™ 493/503. When usingthis reagent's native lipid droplet morphology is preserved and fat content per body volume can be quantified in individual worms[1].

Standard Worm Staining Protocol

1. PREPARE WORMS

1.1 Pipette 1 mL of M9 onto plate containing *C. elegans*. Swirl plate gently and transfer M9 and worms into EpiTube

1.2 Wash worms 3x

1.2.1 Allow worms to settle or centrifuge at 6000 RPM for 2 minutes

1.2.2 Remove supernatant, leaving worms in pellet at bottom of the EpiTube

1.2.3 Add 1 mL M9

1.2.4 Repeat Steps 1.2.1-1.2.3 x 2

1.2.5 After the final rinse, remove as much liquid as possible, leaving only worm pellet

2. DILUTE

2.1 Dilute RediStain Lipid Green reagent immediately prior to use

2.1.1 Thaw at room temperature

2.1.2 Add 5 µL of RediStain™ Lipid Green reagent to 1 mL of M9

2.1.3 Pipette to mix

3. INCUBATE

3.1 Add diluted RediStain™ Lipid Green reagent to the freshly washed worms (step 1.3)

3.2 Incubate for 20-30 minutes at room temperature and away from light

4. WASH

4.1 Remove RediStain™ Lipid Green reagent, leaving worms in a pellet at the bottom of the EpiTube

4.2 Rinse in M9 buffer at least 3 times (see Step 1.2)*. Residual stain may obscure fluorescent signal.

**Alternatively, transfer worms to a fresh plate, and let crawl on a bacterial lawn for approximately 1 hour to destain. (If destaining worms on plate repeat steps 1-1.24, ending with rinsed worms in EpiTube.)*

5. USE

5.1 Image worms immediately.

Protocol for Simultaneous RediStain imaging and EPG in ScreenChip System

1. PREPARE WORMS

1.1 Pipette 1 mL of M9 onto plate containing *C. elegans*. Swirl plate gently and transfer M9 and worms into EpiTube

1.2 Wash worms 3x

1.2.1 Allow worms to settle or centrifuge at 6000 RPM for 2 minutes

1.2.2 Remove supernatant, leaving worms in pellet at bottom of the EpiTube

1.2.3 Add 1 mL M9

1.2.4 Repeat Steps 1.2.1-1.2.3 x 2

1.2.5 After the final rinse, remove as much liquid as possible, leaving only worm pellet

2. PREPARE M9-5HT SOLUTION IMMEDIATELY PRIOR TO USE

2.1 Prepare 1000ul 10mM Serotonin in M9

2.2 Vortex or invert until solution is fully mixed.

3. DILUTE

3.1 Add 5 µL of RediStain™ Lipid Green reagent to 1000uL of 10mM 5HT

3.2 Pipette to mix

4. INCUBATE

4.1 Add diluted RediStain™ Lipid Green reagent -10mM 5HT solution to the freshly washed worms and incubate for 20-30 minutes at room temperature in the dark

5. WASH

5.1 Remove RediStain™ Lipid Green reagent-10mM 5HT, leaving worms in a pellet at the bottom of the EpiTube

5.2 Rinse in freshly prepared 10mM 5HT in M9 buffer at least 3 times (see Step 1.2). Residual stain may obscure fluorescent signal.

6. USE

6.1 Load worms into ScreenChip, record EPG data, and image worms immediately

References

1. Klapper M. et al. **Fluorescence-based fixative and vital staining of lipid droplets in *Caenorhabditis elegans* reveal fat stores using microscopy and flow cytometry approaches.** *J. Lipid. Res.* 52, 1281–1293 (2011).
2. Zhang S. O., Box A. C., Xu N., Le Men J., Yu J., et al. , 2010a **Genetic and dietary regulation of lipid droplet expansion in *Caenorhabditis elegans*.** *Proc. Natl. Acad. Sci. USA* 107: 4640–4645.
3. Palgunow, D., Klapper, M., & Döring, F. (2012). **Dietary Restriction during Development Enlarges Intestinal and Hypodermal Lipid Droplets in *Caenorhabditis elegans*.** *PLoS ONE*, 7(11), e46198. http://doi.org/10.1371/journal.pone.0046198
4. Zhang, S. O., Trimble, R., Guo, F., & Mak, H. Y. (2010). **Lipid droplets as ubiquitous fat storage organelles in *C. elegans*.** *BMC Cell Biology*, 11, 96. http://doi.org/10.1186/1471-2121-11-96

About NemaMetrix

NemaMetrix Inc. specializes in developing and manufacturing devices, consumables, and software for automatic worm screening and phenotyping.

The company's mission is to enable scientists and researchers around the world to better understand human diseases and explore potential treatments for high-impact disorders such as Alzheimer's disease, and ALS (Lou Gehrig's Disease), and cardiac arrhythmias by offering a more affordable and rapid system that supplements the traditional mouse model. Please visit our website for the most up to date information.

Learn more at www.nemametrix.com/about-us

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