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AUTOdot Autophagy Visualization Dye

Monodansylpentane Cadaverine Staining Tool
Catalog # SM1000a

Product Information

Description

AUTODOT™ preferentially segregates into the neutral lipid cores of LDs and emits blue fluorescence, compatible with concurrent use of green and red fluorescent reporters in live-cell imaging. It can be used for visualizing LDs in cell cultures and fixed tissues, making it a versatile marker for LDs in fluorescence microscopy. Major lipid-based pathways such as autophagy, lipolysis, fatty acid oxidation, ketogenesis, and cholesterol synthesis are amenable to tracking by AUTODOT™.

Concentration

0.1M

Target/Specificity

AUTOdot is a monodansylpentane (MDH) staining tool specific for autopahgic vacuoles.

Format

Product is 0.1M MDH supplied in DMSO.

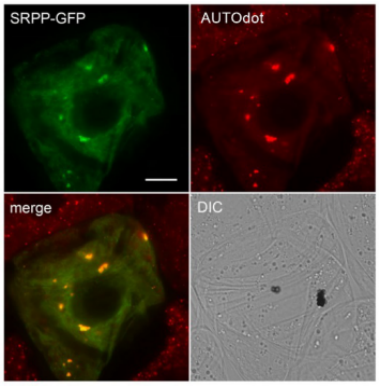
Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions

AUTOdot Autophagy Visualization Dye is for research use only and not for use in diagnostic or therapeutic procedures.

Images



Localization of guayule Small Rubber Particle Protein (SRPP-GFP) to lipid droplets (LD) in a tobacco cell. Shown are representative epifluorescence micrographs of tobacco (Nicotiana tabacum) Bright Yellow-2 (BY-2) cells, which serve as a well-characterized system for studying protein localization in plant cells. BY-2 cells have been transiently transformed via biolistic bombardment with plasmid DNA-encoding full-length guayule SRPP12 C-terminally fused to the N-terminus of the Green Fluorescent Protein (SRPP-GFP). Following bombardment, cells have been incubated in linoleic acid, which induces an increase in the number and size of LD in these cells, and then incubated with AUTODOTTM, which is a blue-fluorescing marker dye for LD in living cells. The fluorescence attributable to the AUTODOTTM stained LD is false colorized red. The yellow color in the merged images represents obvious co-localizations between SRPP-GFP and AUTODOTTM -stained LD, most of which have coalesced, due to the ectopic overexpression of the fusion protein. These larger coalesced structures are not

observed in the neighboring non-transformed cells wherein LD are usually dispersed throughout the cytosol. Similar coalescence of LD has been observed in BY-2 cells transiently overexpressing Arabidopsis LDAP, as well as in various other cells types in which other LD proteins, such as Perilipin-1 and the Ancient Ubiquitous Protein-1, are ectopically overexpressed. Shown also is the corresponding differential interference contrast image. Bar = 10 μm. Plant Signaling & Behavior 8, e27141; 2013

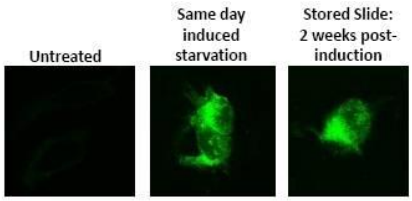


Image of untreated and autophagy induced mouse cerebral cells analyzed by fluorescence microscopy using an inverted microscope equipped with a filter system (excitation filer: 380-420 nm, barrier filter: 450 nm).

Citations

- Partitioning into ER membrane microdomains impacts autophagic protein turnover during cellular aging
- Fluorescent Probe as Dual-Organelle Localizer Through Differential Proton Gradients Between Lipid Droplets and Mitochondria
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- Decoration of myocellular lipid droplets with perilipins as a marker for in vivo lipid droplet dynamics: A super-resolution microscopy study in trained athletes and insulin resistant individuals
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- Nitrogen Starvation and Stationary Phase Lipophagy Have Distinct Molecular Mechanisms
- XK is a partner for VPS13A: a molecular link between Chorea-Acanthocytosis and McLeod Syndrome
- The ATGL lipase cooperates with ABHD5 to mobilize lipids for hepatitis C virus assembly
- Functional interrelationships between carbohydrate and lipid storage, and mitochondrial activity during sporulation in Saccharomyces cerevisiae
- The CoQ oxidoreductase FSP1 acts parallel to GPX4 to inhibit ferroptosis
- PNPLA3, CGI-58, and Inhibition of Hepatic Triglyceride Hydrolysis in Mice
- Mdm1 Maintains Endoplasmic Reticulum Homeostasis by Spatially Regulating Lipid Droplet Biogenesis
- Cerebellar Ataxia Disease-Associated Snx14 Promotes Lipid Droplet Growth at ER-droplet Contacts
- Inhibition of Lipid Droplet Formation by Ser/Thr Protein Phosphatase PPM1D Inhibitor, SL-176
- An alternative membrane topology permits lipid droplet localization of peroxisomal fatty acyl-CoA reductase 1.
- Combined N-terminal androgen receptor and autophagy inhibition increases the antitumor effect in enzalutamide sensitive and enzalutamide resistant prostate cancer cells.
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- SNX14 mutations affect endoplasmic reticulum associated neutral lipid metabolism in autosomal recessive spinocerebellar ataxia 20.
- Rab18 Promotes Lipid Droplet (LD) Growth by Tethering the ER to LDs Through SNARE and NRZ Interactions
- Adhesion-induced eosinophil cytolysis requires the receptor-interacting protein kinase 3 (RIPK3)-mixed lineage kinase-like (MLKL) signaling pathway, which is counterregulated by autophagy.
- Long-Chain Polyprenols Promote Spore Wall Formation in
- Regulation of lipid droplets by metabolically controlled Ldo isoforms.
- Identification of seipin-linked factors that act as determinants of a lipid droplet subpopulation.
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- A Novel Assay Reveals a Maturation Process during Ascospore Wall Formation.
- Pet10p Is a Yeast Perilipin That Stabilizes Lipid Droplets and Promotes Their Assembly
- SNAP-tagged Chikungunya Virus Replicons Improve Visualisation of Non-Structural Protein 3 by Fluorescence

Microscopy
- β-adrenergic induction of lipolysis in hepatocytes is inhibited by ethanol exposure.
- Novel replicons and trans-encapsidation systems for Hepatitis C Virus proteins live imaging and virus-host interaction proteomics.
- Staining of Lipid Droplets with Monodansylpentane.
- Mouse fat storage-inducing transmembrane protein 2 (FIT2) promotes lipid droplet accumulation in plants.
- Spatial control of lipid droplet proteins by the ERAD ubiquitin ligase Doa10.
- Lipid Droplet-Associated Proteins (LDAPs) Are Required for the Dynamic Regulation of Neutral Lipid Compartmentation in Plant Cells
- Role for Lipid Droplet Biogenesis and Microlipophagy in Adaptation to Lipid Imbalance in Yeast
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