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# AUTOdot Autophagy Visualization Dye

Monodansylpentane Cadaverine Staining Tool
Catalog # SM1000b

## Product Information

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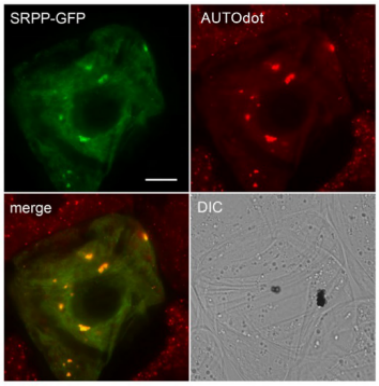
| **Description** | AUTODOT™ preferentially segregates into the neutral lipid cores of LDs and emits blue fluorescence, compatible with concurrent use of green and red fluorescent reporters in live-cell imaging. It can be used for visualizing LDs in cell cultures and fixed tissues, making it a versatile 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

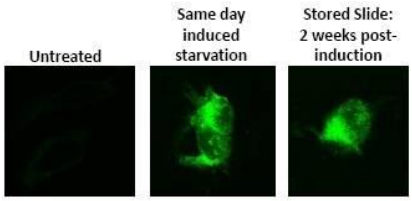



Image of untreated and autophagy induced mouse cerebral cells analyzed by fluorescence microscopy using an inverted microscope equipped with a filter system (excitation filer: 380-420 nm, barrier filter: 450 nm).

## Citations


- A Rosella-PLIN2 knock-in mouse reveals lipophagy and immunometabolic interplay in atherosclerosis.
- Bioinformatic, cell localization, and phylogenetic analyses reveal a novel family of putative lipases in Tetrahymena thermophila.
- PEX11 mediates intralumenal vesicle formation in peroxisomes.
- miR-10b-5p regulates adipocyte lineage commitment and adipogenesis via targeting of Gata6 and Tubby.
- Telmisartan reverses hepatic steatosis via PCK1 upregulation: A novel PPAR-independent mechanism in experimental models of MASLD.
- Development of a whole-cell biosensor for ethylene oxide and ethylene
- Lipid droplets in leaves contain myosin-binding proteins and enzymes associated with furan-containing fatty acid biosynthesis
- E and M SARS-CoV-2 membrane protein expression and enrichment with plant lipid droplets
- Fatty Acyl Coenzyme A Synthetase Fat1p Regulates Vacuolar Structure and Stationary-Phase Lipophagy in Saccharomyces cerevisiae
- Regulated targeting of the monotopic hairpin membrane protein Erg1 requires the GET pathway
- Mechanism of transcription regulation by Acinetobacter baumannii HpaR in the catabolism of p-hydroxyphenylacetate
- SEED LIPID DROPLET PROTEIN1, SEED LIPID DROPLET PROTEIN2, and LIPID DROPLET PLASMA MEMBRANE ADAPTOR mediate lipid droplet-plasma membrane tethering
- Recruitment of Peroxin 14 to lipid droplets affects lipid storage in Drosophila
- Abnormal accumulation of lipid droplets in neurons induces the conversion of alpha-Synuclein to proteolytic resistant forms in a Drosophila model of Parkinson's disease
- EARLY RESPONSIVE TO DEHYDRATION 7 Localizes to Lipid Droplets via Its Senescence Domain
- 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
- An Alternative Membrane Topology Permits Lipid Droplet Localization of Peroxisomal Fatty acyl-CoA Reductase 1
- Inhibition of Lipid Droplet Formation by Ser/Thr Protein Phosphatase PPM1D Inhibitor, SL-176
- Combined N-terminal Androgen Receptor and Autophagy Inhibition Increases the Antitumor Effect in Enzalutamide Sensitive and Enzalutamide Resistant Prostate Cancer Cells
- Super-resolution Microscopy Localizes Perilipin 5 at Lipid Droplet-Mitochondria Interaction Sites and at Lipid Droplets Juxtaposing to Perilipin 2
- PNPLA3 variant M148 causes resistance to starvation-mediated lipid droplet autophagy in human hepatocytes.
- PUX10 Is a Lipid Droplet-Localized Scaffold Protein That Interacts With CELL DIVISION CYCLE48 and Is Involved in the Degradation of Lipid Droplet Proteins
- PCYT1A Regulates Phosphatidylcholine Homeostasis from the Inner Nuclear Membrane in Response to Membrane Stored Curvature Elastic Stress.
- 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.

- Aurora A kinase phosphorylates Hec1 to regulate metaphase kinetochore-microtubule dynamics.
- 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
- The seipin complex Fld1/Ldb16 stabilizes ER-lipid droplet contact sites.
- Lipid partitioning at the nuclear envelope controls membrane biogenesis.
- Hdac3-Deficiency Increases Marrow Adiposity and Induces Lipid Storage and Glucocorticoid Metabolism in Osteo-Chondroprogenitor Cells.
- The Generation of Neutrophils in the Bone Marrow Is Controlled by Autophagy
- Chronic Enrichment of Hepatic Endoplasmic Reticulum-Mitochondria Contact Leads to Mitochondrial Dysfunction in Obesity
- High confidence proteomic analysis of yeast LDs identifies additional droplet proteins and reveals connections to dolichol synthesis and sterol acetylation.
- Lipid Droplet-Associated Proteins (LDAPs) Are Involved in the Compartmentalization of Lipophilic Compounds in Plant Cells
- The Emergence of Lipid Droplets in Yeast: Current Status and Experimental Approaches
- Monodansylpentane as a Blue-Fluorescent Lipid-Droplet Marker for Multi-Color Live-Cell Imaging

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.