

## Autophagy Assay Kit

Autophagy Assay, Red Detection Kit

|                              |                                                         |
|------------------------------|---------------------------------------------------------|
| CATALOG #<br><b>AAA50325</b> | APPLICATIONS<br><b>Flow Cytometry, Functional Assay</b> |
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### PRODUCT SYNONYMS

Autophagy Assay; Red Detection Kit; Autophagy Assay Kit; Red; Autophagy Assay assay kit

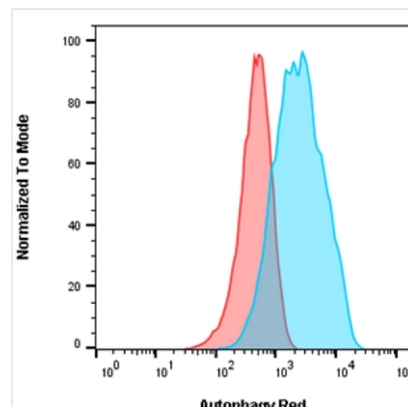
### PRODUCT SPECIFICATIONS

|                                                       |                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reagents In The Kit                                   | Autophagy Probe, Red, 4 vials - lyophilized Fixative, 6 ml                                                                                                                                                                                                                                                                                                         |
| Applicable Applications for Autophagy Assay assay kit | FCM/FACS (Flow Cytometry)                                                                                                                                                                                                                                                                                                                                          |
| Test Principle                                        | Autophagy Probe, Red is a cell-permeant aliphatic molecule that fluoresces brightly when inserted in the lipid membranes of autophagosomes and autolysosomes. Autophagy Probe, Red can be readily detected by flow cytometry with optimal excitation at 590 nm and peak emission at 620 nm (ZE5 Cell Analyzer settings, 561 nm laser and 615/24 or 640/20 filter). |
| Max Ex/Em                                             | Fluorophore: Red Probe ; Excitation Max (nm): 590 ; Emission Max (nm): 620                                                                                                                                                                                                                                                                                         |
| Preparation and Storage                               | Store the unopened kit (and each unopened component) according to the storage instructions on each component label.<br>Store the Autophagy Probe, Red at -20 degree C. Once reconstituted in DMSO, the Autophagy Probe, Red stock should be stored at -20 degree C for 6 months, protected from light.<br>Avoid repeated freezing and thawing.                     |

### IMAGES

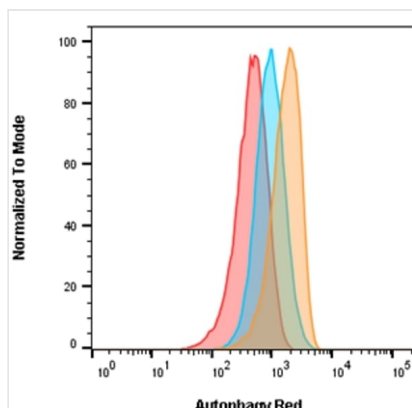


Hazard Indicators  
Hazard Indicators



#### Application Data

Autophagy induction in Jurkats measured by flow cytometry using Autophagy Probe, Red. Jurkat cells were either untreated for basal conditions (red) or incubated in HBSS for 2 hours and 10 nM Bafilomycin A for 2 hours (blue) to induce autophagy. After staining with Autophagy Probe Red for 30 minutes, cells were washed and analyzed on the ZE5 Cell Analyzer using the 561 nm laser and 640/20 filter.



#### Application Data

Autophagy induction in Jurkats measured by flow cytometry using Autophagy Probe, Red. Jurkat cells were either untreated for basal conditions (red), treated with 0.5  $\mu$ M Rapamycin for 18 hours (blue), or treated with 0.5  $\mu$ M Rapamycin for 18 hours and 10 nM Bafilomycin A for 2 hours (orange) to induce autophagy. After staining with Autophagy Probe, Red for 30 minutes, cells were washed and analyzed on the ZE5 Cell Analyzer using the 561 nm laser and 640/20 filter.

## ADDITIONAL INFORMATION

### Related Product Information for Autophagy Assay assay kit

Background: Autophagy is a conserved lysosomal recycling process by which cells break down their own components such as proteins, lipids and carbohydrates. Autophagy plays a critical role in maintaining homeostasis by preventing the accumulation of damaged organelles by disassembling unnecessary or dysfunctional cells and cellular components (Mizushima et al. 2011). Autophagy occurs at low levels in the cell under normal conditions and can be rapidly upregulated during times of starvation or stress. Such degradation activities serve to provide nutrients (for example amino acids, nucleotides, fatty acids) and energy during periods of elevated bioenergetic demands (Mizushima et al. 2011, Levine et al. 2008). Another function of autophagy is to assist with the detection and destruction of intracellular pathogens (viruses, bacteria and parasites) (Levine et al. 2011). Dysregulation of autophagy has been associated with many disease states including cancer, infection and degenerative diseases (Levine et al. 2008). Autophagy is a dynamic process typically divided into three stages (Figure 1). During stage one, cytoplasmic components targeted for degradation are sequestered within a double-membrane phagopore (also called the isolation membrane). This results in the formation of a double-membrane vesicle called the autophagosome. During stage two, the autophagosome fuses with the lysosome to form the autolysosome. Degradation of the autophagosomal contents occurs during stage three (Mizushima et al. 2011, Hundeshagen et al. 2011). Autophagy Assay Red Detection Kit enables researchers to detect and monitor the in vitro development of autophagy in living cells. Autophagy Probe Red is a cell-permeant aliphatic molecule that fluoresces brightly when inserted in the lipid membranes of autophagosomes and autolysosomes. Autophagy Probe Red can be readily detected by flow cytometry (Figure 2) with optimal excitation at 590 nm and peak emission at 620 nm (ZE5 Cell Analyzer settings: 561 nm laser; 615/24 or 640/20 filter). Autophagy Probe Red is for research use only, not for use in test procedures.

**For Research Use Only.** Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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Online datasheet: <https://stage.aaabiotech.com/assay-kits/autophagy-assay/50325>