Datasheet: APO010A

BATCH NUMBER 175246

Description:	AUTOPHAGY ASSAY, RED DETECTION KIT
Name:	AUTOPHAGY ASSAY KIT, RED
Format:	Kit
Product Type:	Kits
Quantity:	50 TESTS

Product Details

Applications

This product has been reported to work in the following applications. This information is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information. For general protocol recommendations, please visit www.bio-rad-antibodies.com/protocols.

	Yes	No	Not Determined	Suggested Dilution
Flow Cytometry	▪			Refer to Instructions For Use

Where this product has not been tested for use in a particular technique this does not necessarily exclude its use in such procedures.

Max Ex/Em

Fluorophore	Excitation Max (nm)	Emission Max (nm)
Red Probe	590	620

Product Information

Autophagy Assay, Red Detection Kit allows for the detection and monitoring of *in vitro* development of autophagy in living cells.

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 (amino acids, nucleotides, fatty acids, etc.) 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. 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**).
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).
Reagents In The Kit	Autophagy Probe, Red, 1 vial - lyophilized Fixative, 6 ml
Instructions For Use	Instructions for use can be found at www.bio-rad-antibodies.com/uploads/IFU/APO010.pdf
References	1. Barghi, F. *et al.* (2026) Dual CDK4/6-PI3K/mTOR inhibition reinforces cytostatic programs and tumor control in preclinical models of primary and metastatic osteosarcoma. Neoplasia. 72: 101266. 2. Pandya, K. & Singh, N. (2026) MDC1 promotes nuclear localization of Beclin-1 and supports its role in ATM pathway in response to oxidative stress. Eur J Cell Biol. 105 (3): 151540.
Storage	MULTIPLE STORAGE CONDITIONS APPLY ON ARRIVAL. Store the unopened kit (and each unopened component) according to the storage instructions on each component label. Store the Autophagy Probe, Red at -20°C. Once reconstituted in DMSO, the Autophagy Probe, Red stock should be stored at -20°C for 6 months, protected from light. Avoid repeated freezing and thawing.
Guarantee	Guaranteed until date of expiry. Please see product label.
Health And Safety Information	Material Safety Datasheet documentation #20402 #10498 available at: https://www.bio-rad-antibodies.com/SDS/APO010A
Regulatory	For research purposes only

Product inquiries: www.bio-rad-antibodies.com/technical-support

To find a batch/lot specific datasheet for this product, please use our online search tool at: bio-rad-antibodies.com/datasheets

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