

Annexin V — Purified

Apoptosis & Protease Detection Kits

Product Information

Product No.: A436

Storage: 2° to 8°C

Product Description

Background:

Apoptosis, the physiological process of cell death, is a naturally occurring phenomenon. It is normally a tightly regulated process; however, if deregulated, tumor growth can result. Apoptotic processes can be measured in the laboratory easily and most effectively by using a FITC-labeled Annexin V protein to stain cells and analyze them via flow cytometry. It is a useful method to screen and analyze cells in a high throughput manner, resulting in a clearer understanding of the cellular response to various stimuli.

When cells are undergoing cell death, phosphatidylserine (PS), a phospholipid which makes up a portion of the cell membrane, will translocate to the outside-facing side of the membrane. This translocation in the cell death mechanism exposes PS to the extracellular environment. Annexin V, a 35-36 kDa phospholipid-binding protein, has a high affinity for PS (K_D=7nmol/l). Once Annexin V is bound to the apoptotic cell it acts as a beacon for cells that have undergone apoptosis. Annexin V is often conjugated to FITC so the amount of signal can be measured and analyzed from labeled cells using a flow cytometer. The translocation of PS to the outside or exposed side of the membrane is an early event in the apoptotic process. Therefore, Annexin V staining is considered a marker for early-stage apoptosis. Often times, Annexin V is paired with Propidium Iodide (PI) stain in order to analyze for late-apoptotic or dead cells. Early-stage apoptotic cells will only take up the Annexin V stain but will remain PI negative, and late-stage apoptotic cells will be positive for both Annexin V and PI.

Application Guidance:

Custom Conjugation: Because this product is azide-free, tag-free, and lacks carrier proteins, it is highly optimized for conjugation with FITC, PE, APC, or custom near-IR dyes using standard amine-reactive chemistry.

Flow Cytometry / Imaging: Once conjugated, Annexin V is typically paired with a vital dye such as Propidium Iodide (PI) or 7-AAD.

Known Reactivity Species:

Human, Mouse, Rat

Expression Host

HEK-293 Cells

Format:

Purified No Carrier Protein

Formulation

Lyophilized from a 0.22 µm filtered solution in 1x PBS (pH 7.4) containing 5% Trehalose (w/v) as a lyoprotectant.

Storage and Stability

Short-Term Storage: The formulation is stable for up to three (3) months when stored in the dark at 2°C to 8°C.

Long-Term Storage: For long-term storage of the lyophilized material, storage between -20°C and -35°C is recommended.

Products are for research use only. Not for use in diagnostic or therapeutic procedures.

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Country of Origin

USA

References

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- 2) Gassman, NR. *et al.* (2018) *Environ Toxicol*. **33**(3):333-342. [PubMed](#)
- 3) Gelles, JD. and Chipuk, JE. (2016) *Cell Death Dis*. **7**(12): e2493.