

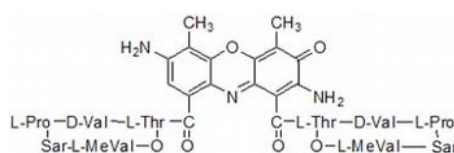


## 7-AAD

*Double-stranded nucleic acids stain that doesn't readily pass through intact cell membranes but can penetrate cell membranes of dying or dead cells*

### Product Description

|                                |   |
|--------------------------------|---|
| <b>Name :</b>                  | <b>7-Aminoactinomycin D (7-AAD)</b>                             |
| <b>Catalog Number :</b>        | FP-132303, 1mg  |
|                                | FP-1J7621, 1 ml in DMSO:water (1:1)                             |
| <b>Structure :</b>             | C <sub>62</sub> H <sub>87</sub> N <sub>13</sub> O <sub>16</sub> |
| <b>Molecular Weight :</b>      | MW= 1270.45   |
| <b>Solubility:</b>             | DMSO, DMF and CH <sub>3</sub> OH                                |
| <b>Absorption / Emission :</b> | $\lambda_{exc} \lambda_{em}$ (CH <sub>3</sub> OH) = 546/648 nm  |



**Storage:** -20°C Protect from light and moisture

### Introduction

7-Aminoactinomycin D (7-AAD) is a fluorescent chemical compound with a strong affinity for DNA. It is used as a fluorescent marker for DNA in fluorescence microscopy and flow cytometry. It intercalates in double-stranded DNA, with a high affinity for GC-rich regions, making it useful for chromosome banding studies.

7-AAD is compatible with most blue and green fluorophores – and even many red fluorophores – in multicolour applications. 7-AAD/DNA complexes can be excited at 488 nm with an argon-ion laser, and has a large Stokes shift with an emission maxima of 647 nm.

7-AAD does not readily pass through intact cell membranes; if it is to be used as a stain for imaging DNA fluorescence, the cell membrane must be permeabilized or disrupted. 7-AAD is also used as a cell viability stain. Cells with compromised membranes will stain with 7-AAD, while live cells with intact cell membranes will remain dark.

### Directions for use

#### Guidelines for use in flow cytometry

##### Stock Solution

For long-term storage, store unopened vials of 7-AAD in the freezer. Dissolve 1 mg of 7-AAD powder by adding 50 microliters of absolute methanol directly to the vial. Mix well and add 950 microliters of 1 X PBS with Ca<sup>2+</sup> and Mg<sup>2+</sup> to achieve a concentration of 1 mg/ml. Store solution tightly closed and protected from light at 4°C. This solution is stable for several months.

FT-132303

### Protocol

Stain your cells as outlined in the protocol for single color or dual-color staining with FITC and/or PE-labeled monoclonal antibodies.

After the last washing step resuspend your cells as usual in 1 ml of buffer for analysis. If you want to assess viability of your samples add 1-2 microliters of the 7-AAD stock solution to each tube and mix well. Keep the samples in this solution at 4°C protected from light for approximately 20 minutes or until analysis on the flow cytometer.

NOTE: This method can now be used in combination with formaldehyde fixation of samples. Samples are first stained with 7-AAD, then fixed in 1% formaldehyde that contains 2-5 microliters/ml of actinomycin D (Fetterhoff). 7-AAD can be used for dead cell exclusion on samples that are stained with PE (phycoerythrin)-conjugated antibodies, because the emission spectra of 7-AAD and PE can be easily separated on the flow cytometer.

Other protocol may be found in the literature.

### References

- **Boomershine CS** *et al.*, Autoimmune pancreatitis results from loss of TGF $\beta$  signalling in S100A4-positive dendritic cells, *Gut*, 58: 1267 - 1274 (2009) [Article](#)
- **Fetterhoff TJ** *et al.* Fluorescent detection of non-viable cells in fixed cell preparations. *Cytometry* 14 (Suppl. 6):27 (1993)
- **Torsten K.** *et al.*, Inducible expression of EVI1 in human myeloid cells causes phenotypes consistent with its role in myelodysplastic syndromes, *J. Leukoc. Biol.*, 10.1189 (2009) [Article](#)

## Technical and scientific information

### Related products

- Annexin V-FP488, [FP-BH9390](#)
- Annexin V, R-PE, [FP-AH191A](#)
- Propidium iodide, [FP-36774A](#)

## Ordering information

[Catalog size quantities and prices may be found at www.interchim.com/](http://www.interchim.com/)

Please inquire for higher quantities (availability, shipment conditions).

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