Miltenyi Biotec

7-AAD Staining Solution

Analyte specific reagents (ASR)

Analytical and performance characteristics were not established

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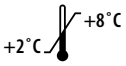
1. General information

Intended use
7-AAD (7-amino-actinomycin D) is a fluorescent dye that intercalates into double-stranded DNA (GC rich regions). It can be used to fluorescently label and detect dead or dying cells by flow cytometry.

Reagents and contents
7-AAD Staining Solution

Product	Volume	REF
7-AAD Staining Solution	1 mL	170-081-088

2. Technical data and background information

Components	1 mL 7-AAD Staining Solution
Product formulation	7-AAD Staining Solution is supplied in phosphate-buffered saline, pH 7.2, at a concentration of 52.5 µg/mL
	Store at +2 °C to +8 °C (+36 °F to +46 °F).
	Store protected from light.
	The use-by date is indicated on the vial label.
	For in-use stability at +2 °C to +8 °C (+36 °F to +46 °F) storage temperature refer to the use-by date indicated on the vial label. Do not use the reagent after the use-by date.

Background information
7-AAD is a fluorescent dye that intercalates into double-stranded DNA (GC rich regions). It is excluded from viable cells but can penetrate cell membranes of dead or dying cells. The fluorescence emission maximum for 7-AAD is at 647 nm. When excited at 488 nm, 7-AAD is detected in the red fluorescence channel commonly used for R-phycoerythrin(PE)-CyR5 tandem dye detection, with minimal spectral overlap into the yellow fluorescence channel commonly used for PE detection.

3. Warnings and precautions

- Interpretation of results is under the full responsibility of the user.
- For all handling, consideration of good laboratory practice (GLP) regulations is recommended.
- Use of the reagents is restricted to trained and qualified personnel only.
- All biological specimens and all materials that come into contact with blood and blood products must be treated as infectious material. Regulations for the treatment and disposal of infectious material must be followed.
- Reagents contain sodium azide (NaN_3), a chemical highly toxic in pure form. However, at product concentrations, it is not classified as hazardous. Sodium azide may react with lead and copper plumbing to form highly explosive buildups of metal azides. Upon disposal, flush with large volumes of water to prevent metal azide build-up in plumbing. Safety guidelines must be observed.
- For material required but not provided the manufacturers recommendations and safety regulations must be followed.
- Reagents should not be used if signs of leakage are observed. Use undamaged and sealed vials only.

4. Application

Reagents can be used for labeling of dead or dying cells by flow cytometry and other research applications.

5. General Use considerations

Principle of method:
Incubating a sample of interest, e.g. peripheral blood mononuclear cells, with the provided reagent leads to fluorescent staining of apoptotic and/or dead cells. Analysis of the sample is performed in a flow cytometer at a single-cell level. The analysis is based on the detection of characteristic light emission patterns emitted by the fluorescently labeled cell upon excitation with laser light. The collected data can be processed and analyzed using flow cytometry software.

Important notes:
Exposure of reagents to temperatures below +2 °C (+36 °F) and above +8 °C (+46 °F) and to light should be minimized during handling.

Sample requirements
- Reagents can be used for determination of stained cells in whole blood samples by flow cytometry.
- Each cell source can have different storage conditions and limitations that should be considered prior to collection and analysis. For collection of patient samples national legislation must be followed.
- Whole blood samples should be stained within 24 hours.

Quality control:
It is recommended to run regularly a control sample from a normal adult specimen or commercially available whole blood control as a quality control of the system.

6. Analytical specificity

7-AAD is a well-documented viability marker, which binds specifically to cytosine and guanine bases of the DNA double strand of non-viable cells. Combined with its spectral properties it is well-suited for flow cytometry analysis. The results have been published and are referenced in Gill, J.E., Jotz, M.M., Young, S.G., Modest, E.J., Sengupta, S.K., "7-Amino-actinomycin D as a cytochemical probe. I. Spectral properties", 1975, J. Histochem. Cytochem., 23, 793-799 and Schmid, I. *et al.* (1992) "Dead cell discrimination with 7-aminoactinomycin D in combination with dual color immunofluorescence in single laser flow cytometry". Cytometry 13 (2): 204–208 and Keeney, M. *et. al* "Single Platform Flow Cytometric Absolute CD341 Cell Counts Based on the ISHAGE Guidelines" 1998 Wiley-Liss Inc.

7. Limitations

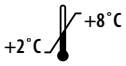
Reagent data was collected typically with EDTA-treated blood. Reagent performance can be affected by the use of other anticoagulants.

8. References

1. Gill, J.E., Jotz, M.M., Young, S.G., Modest, E.J., Sengupta, S.K., "7-Amino-actinomycin D as a cytochemical probe. I. Spectral properties", 1975, J. Histochem. Cytochem., 23, 793-799.
2. Schmid, I. *et al.* (1992) Dead cell discrimination with 7-amino-actinomycin D in combination with dual color immunofluorescence in single laser flow cytometry. Cytometry 13 (2): 204–208
3. Keeney, M. *et. al* "Single Platform Flow Cytometric Absolute CD341 Cell Counts Based on the ISHAGE Guidelines" 1998 Wiley-Liss Inc.

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9. Glossary of symbols

	Manufacturer		Use-by date
	Order number		In-use stability
	Batch code		Temperature limit
	Consult instruction for use		Protect from sunlight
	Phone		Website

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