Product name: Propidium Iodide

Product overview: Propidium Iodide (PI) binds to double-stranded DNA. PI cannot cross intact plasma membrane and therefore will only be present in DNA of cells where the plasma membrane has been compromised/ permeabilized.

For Microscopy analysis: PI can be viewed using rhodamine(red) filter (\(\lambda = 536/617\)). Cells will only be stained if the membrane has been permeated, either naturally (non-viable cells) or with detergents (for fluorescent staining).

Flow Cytometry analysis: PI staining can be monitored in FL2 (DNA content) or FL3 (viability) channel.

If used together as control for Annexin V assays ab14082, ab14083 or ab14152, PI should be diluted to 250 µg/ml solution (in PBS) prior use and added as 1 µl/ Annexin V Assay (0.25µg/assay).

Visit our FAQs page for tips and troubleshooting.

Tested applications: Suitable for: FM

Properties:

Storage instructions: Store at +4°C. Please refer to protocols.

Components | Identifier | 1 ml
---|---|---
Propidium Iodide (1mg/ml) | ab14083 | 1 x 1ml

Relevance: Propidium Iodide (PI) (MW=668.4 Da) is an intercalating agent and a fluorescent molecule which is membrane impermeant and generally excluded from viable cells. Upon entering cells, PI will bind to DNA and RNA by intercalating between bases. Once bound to the nucleic acids, its fluorescence is enhanced 20- to 30-fold. \(E_{\text{max}}= 536\text{nm} / E_{\text{max}}= 617\text{nm}\).

Applications:

Our Abpromise guarantee covers the use of ab14083 in the following tested applications. The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.
Wang et al. used ab14083 to investigate an optimized platform for maintaining proliferation of giant panda mesenchymal stem cells (MSCs). MSCs were fixed in 70% alcohol and 30% PBS at 4°C for 1 hour. Cells are then incubated in the dark with PBS, 20µg/ml propidium iodide (ab14083) and 1% RNaseA for 30 minutes at 37°C. Cell samples are resuspended in PBS and analyzed using FACS Calibur flow cytometry.

Flow cytometry analysis shows the cells are at different cell cycle stages in different concentrations (0ng/ml and 5ng/ml respectively) of basic fibroblast growth factor (bFGF).

Vero-DogSLAM (VDS) cells and Vero (African Green Monkey kidney) cells were infected with wtCDV. Cells were fixed, permeabilised and stained with SSPE serum and rabbit anti-human FITC; nuclei were stained using ab14083 propidium iodide. Images were taken using a Nikon Eclipse TE2000-U UV microscope (x400).

### Application

<table>
<thead>
<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>FM</td>
<td></td>
<td>Use at an assay dependent concentration.</td>
</tr>
</tbody>
</table>

### Images


Flow cytometry: ab14083

Wang et al., PLoS One, 10(9). Fig 3a & c.
doi:10.1371/journal.pone.0137712

Immunofluorescence analysis using ab14083

Vero-DogSLAM (VDS) cells and Vero (African Green Monkey kidney) cells were infected with wtCDV. Cells were fixed, permeabilised and stained with SSPE serum and rabbit anti-human FITC; nuclei were stained using ab14083 propidium iodide. Images were taken using a Nikon Eclipse TE2000-U UV microscope (x400).

Please note: All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE"

**Our Abpromise to you:** Quality guaranteed and expert technical support

- Replacement or refund for products not performing as stated on the datasheet
- Valid for 12 months from date of delivery
- Response to your inquiry within 24 hours
- We provide support in Chinese, English, French, German, Japanese and Spanish
- Extensive multi-media technical resources to help you
- We investigate all quality concerns to ensure our products perform to the highest standards

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit https://www.abcam.com/abpromise or contact our technical team.

**Terms and conditions**

- Guarantee only valid for products bought direct from Abcam or one of our authorized distributors