**Overview**

<table>
<thead>
<tr>
<th><strong>Product name</strong></th>
<th>TUNEL Assay Kit - In situ BrdU-Red DNA Fragmentation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Detection method</strong></td>
<td>Fluorescent</td>
</tr>
<tr>
<td><strong>Sample type</strong></td>
<td>Tissue, Adherent cells, Suspension cells</td>
</tr>
<tr>
<td><strong>Assay type</strong></td>
<td>Quantitative</td>
</tr>
<tr>
<td><strong>Assay time</strong></td>
<td>3h 00m</td>
</tr>
</tbody>
</table>
| **Species reactivity** | **Reacts with:** Mouse, Human  
**Predicted to work with:** Mammal |

**Product overview**

TUNEL Assay Kit - In situ BrdU-Red DNA Fragmentation (ab66110) is a convenient and sensitive method to detect DNA fragmentation by flow cytometry and fluorescence microscopy in live cells. The kit uses Br-dUTP (brominated deoxyuridine triphosphate nucleotide), which can be more readily incorporated into DNA strand breaks that other dUTP labels such as fluorescein, biotin or dioxigenin. The greater incorporation rate produces a brighter signal when the Br-dUTP sites are detected with an anti-BrdU monoclonal antibody directly labeled with a red fluorochrome.

The kit includes cells that can be used as positive or negative control. This assay is especially suitable for studying DNA fragmentation in GFP-transfected cells.

Visit our FAQs page for tips and troubleshooting.

**Notes**

This kit is BrdU-Red labeled (Ex/Em = 488/576 nm). If want to use FITC (Ex/Em = 495/519 nm) as a label, we recommend our *In situ Direct DNA Fragmentation (TUNEL) Assay Kit* (ab66108).

**Tested applications**

**Suitable for:** FM, Flow Cyt, IHC-P
Relevance

Internucleosomal DNA fragmentation is a hallmark of apoptosis in mammalian cells.

Applications

Our Abpromise guarantee covers the use of ab66110 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

<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>
<tr>
<td>Flow Cyt</td>
<td></td>
<td>Use at an assay dependent concentration.</td>
</tr>
<tr>
<td>IHC-P</td>
<td></td>
<td>Use at an assay dependent concentration. PubMed: 24992337</td>
</tr>
</tbody>
</table>

Images

Immunohistochemical analysis of paraffin embedded 5 micron thick testis tissues of 8 week old Stag3+/− and Stag3−/− (Stromal antigen) mice. Apoptotic cells were detected using In situ BrdU-Red DNA Fragmentation (TUNEL) Assay Kit (ab66110). DAPI was used as a counterstain.
Detection of DNA fragmentation (TUNEL staining) using the negative and positive control cells (HL-60 untreated and treated with camptothecin). Cells were stained following the assay protocol. The fluorescence signal was detected and analyzed using BD FACScan System (Becton Dickinson).

TUNEL staining in whole mount Hydractinia echinata using In situ BrdU-Red DNA Fragmentation (TUNEL) Assay Kit (ab66110).

Animals were fixed in 4% PFA in PBS for 1 hour and processed as per the protocol without proteinaseK treatment. In place of proteinaseK animals were permeabilised in 3% Triton in PBS for 15 minutes. Animals were counter-stained with DAPI.

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 http://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