CytoTrack™ Cell Proliferation Assay Kit

Catalog #  Description
135-1202  CytoTrack Blue 403/454 Cell Proliferation Assay Kit, includes 4 x 50 assay vials and 250 μl of DMSO, for running 200 assays
135-1203  CytoTrack Green 511/525 Cell Proliferation Assay Kit
135-1204  CytoTrack Yellow 542/556 Cell Proliferation Assay Kit
135-1205  CytoTrack Red 628/643 Cell Proliferation Assay Kit

For research purposes only.

Description
CytoTrack cell proliferation assay kits are available in four distinct dyes for easy multicolor cell analysis: blue, green, yellow, and red. Easily incorporate a cell tracking stain into your multicolor panel.

The proprietary chemistry of CytoTrack dyes enables the resolution of up to ten cell divisions. Each dye is cell permeable and comprises a fluorophore, a fluorescence blocker, and a cell-retaining group. Upon entering a live cell, the fluorescence blocker is cleaved by intracellular esterases and the cell-retaining group of the fluorophore reacts with intracellular proteins to create a stable, covalent bond (Figure 1). As the cells divide, the fluorescence intensity is successively halved and each cell division can be identified.

Fig. 1. Consisting of three components, CytoTrack dyes efficiently label live cells for visualizing up to ten cell divisions.
Assay Protocol

Important:
Thaw all components prior to use.

1. Prepare a 500x stock solution. Add 50 µl of DMSO and mix.

2. Protocol for use in culture medium
Add 1 µl of stock solution into 500 µl of media containing 1 x 10^6 cells of interest.

2. Protocol for use with buffer
Prepare a 1x working solution. Add 1 µl of stock solution into 500 µl of buffer, pH 7. Add 500 µl of 1x solution to 1 x 10^6 cells.

3. Incubate at room temperature. Protect from light.

4. Pellet the cells by centrifugation.

5. Remove the supernatant and wash the cells using 3 ml of fresh, prewarmed culture media.

6. Resuspend the cells in 500 µl of culture media.

7. Place the cells in the appropriate conditions for cell proliferation.

8. Harvest the cells and stain them for other markers if appropriate.

9. Analyze or sort the cells using a flow cytometer or S3™ cell sorter with the appropriate excitation and emission filters.
Kit Contents and Storage

Follow the guidelines in Table 1 for storing kit components.

Table 1. Kit components and storage.

<table>
<thead>
<tr>
<th>Kit Component</th>
<th>Quantity</th>
<th>Storage, °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>CytoTrack dye</td>
<td>4 vials</td>
<td>–20</td>
</tr>
<tr>
<td></td>
<td>50 assays/vial</td>
<td>Protect from light</td>
</tr>
<tr>
<td>DMSO</td>
<td>1 vial (250 µl)</td>
<td>–20</td>
</tr>
</tbody>
</table>

CytoTrack Cell Proliferation Assay Kits

Use Table 2 to select the appropriate CytoTrack kit to label cells.

Table 2. Optimal excitation laser specifications.

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Labeling Dye Description</th>
<th>Optimal Excitation Laser, nm</th>
</tr>
</thead>
<tbody>
<tr>
<td>135-1202</td>
<td>CytoTrack Blue 403/454</td>
<td>405</td>
</tr>
<tr>
<td>135-1203</td>
<td>CytoTrack Green 511/525</td>
<td>488</td>
</tr>
<tr>
<td>135-1204</td>
<td>CytoTrack Yellow 542/556</td>
<td>532</td>
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<tr>
<td>135-1205</td>
<td>CytoTrack Red 628/643</td>
<td>632, 640</td>
</tr>
</tbody>
</table>

For more information, visit [www.bio-rad.com/cytotrack](http://www.bio-rad.com/cytotrack).