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## eFluor® Nanocrystals for Cell Labeling

### Research Use Only

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#### Introduction

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Reactive eFluor® Nanocrystals, available with either amine or carboxyl surface chemistry, and composed of non-toxic, cadmium-free InGaP can be used for cell labeling experiments. The charge of these nanocrystals, imparted by the functional amine or carboxyl surface-chemistry, allows them to pass across a cell membrane. Labeled cells can be maintained in culture or injected into a host animal for *in vivo* imaging. The excellent photostability of eFluor® Nanocrystals and the cadmium-free composition of InGaP Reactive eFluor® Nanocrystals make them ideal reagents for cell-tracing experiments.

#### Useful websites

**Wikipedia** ([http://en.wikipedia.org/wiki/EFluor\\_Nanocrystal](http://en.wikipedia.org/wiki/EFluor_Nanocrystal))

General information regarding the eFluor nanocrystal properties can be found here.

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#### Protocol for Using Reactive eFluor Nanocrystals for Cell Labeling

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##### Materials

- Cell Line and Appropriate Complete Medium
- 8 Well BD Falcon Culture Slides (cat. 354118 or equivalent)
- Reactive eFluor® Nanocrystals - InGaP Composition
- 0.2 µm Syringe Filter or Spin Filter if Sterilization is Necessary

#### Experimental Procedure

##### Step I: Subculture Cells

1. Subculture adherent cells from a 75cm<sup>2</sup> culture flask in 8 well BD Falcon Culture Slides at a density of  $2 \times 10^4$  cells per well (cell density may vary if using different size culture slides).
2. Incubate the cells in a 37°C, 5% CO<sub>2</sub> incubator for 24 to 48 hours until confluent

##### Step II: Labeling Procedure

1. Dilute the eFluor® Nanocrystals in complete medium to a final OD between 0.1 and 0.025. Since optimal eFluor Nanocrystal dilution may vary with cell type, a titration is recommended.
2. If necessary, sterilize the labeling solution using a 0.2 µm syringe filter or spin filter.
3. Replace culture medium with 200µL of labeling solution in each of the 8 wells of the culture slides.
4. Incubate the cells in a 37°C, 5% CO<sub>2</sub> incubator overnight to 24 hours.
5. Remove the labeling solution and wash cells 3X with PBS.
6. Analyze cells with fluorescence or laser scanning confocal microscope or harvest cells for other experimentation

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### References

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Jaiswal, J.K., Simon, S.M. 2007. Optical monitoring of single cells using quantum dots. *Methods Mol Biol.* 374:93-104.