

Protonex™ Red 670-Latex Bead Conjugate

Catalog number: 21222
Unit size: 1 mL

Component	Storage	Amount (Cat No. 21222)
Protonex™ Red 670-Latex Bead Conjugate	Refrigerated (2-8 °C), Minimize light exposure	1 mL

OVERVIEW

Protonex™ Red 670-Latex Bead Conjugates exhibit unique pH-dependent fluorescence properties. Unlike most existing fluorescent dyes that typically increase in fluorescence at higher pH levels, Protonex™ Red 670-Latex Bead Conjugates become significantly more fluorescent under acidic conditions. This characteristic makes them an ideal tool for studying phagocytosis and its modulation by drugs or environmental factors. The beads display minimal fluorescence outside of cells, eliminating the need for wash steps and enhancing their utility for live-cell imaging. Protonex™ Red 670-Latex Bead Conjugates are particularly effective in highlighting acidic cellular compartments such as phagosomes, lysosomes, and endosomes, where they emit a bright red fluorescence. Additionally, Protonex™ Red 670-Latex Bead Conjugates can be used in combination with green fluorescent dyes like GFP, Fluo-8, calcein, or FITC-labeled antibodies for multiplexed cell functional analysis. Their spectral properties are similar to those of Cy5, allowing for the use of common Cy5 filter sets in assays involving Protonex™ Red 670, further facilitating their integration into existing experimental setups.

AT A GLANCE

Chemical and Physical Properties

Solvent:	Water
Solids Content:	1% in PBS
Number of Microspheres per mL:	~4e+10
Ex/Em:	643/660 nm
Mean Diameter:	0.72 µm

KEY PARAMETERS

Fluorescence microscope

Emission	Cy5 filter set
Excitation	Cy5 filter set
Recommended plate	Black wall/clear bottom

SAMPLE EXPERIMENTAL PROTOCOL

Important

The following is a recommended protocol for granulocytes. This protocol only provides a guideline and should be modified according to your specific experimental conditions.

Protocol

1. Prepare cells as desired. For example, prepare the granulocytes at 10^7 cells/mL with Hanks and 20 mM Hepes buffer (HHBS), and add 100 µL to a polypropylene tube.

Note: Each cell line should be evaluated on an individual basis to determine the optimal cell density.

2. Add 1-10 µL of the Protonex™ Red 670-Latex Bead Conjugate to the tube and incubate with gentle shaking for 30 minutes at 37 °C.

Note: Each cell line should be evaluated on an individual basis to determine the optimal incubation time.

3. Prepare an identical sample that is incubated at 4 °C and label it as a control.
4. At the end of the 30-minute incubation, stop phagocytosis by adding 2mL of ice-cold HHBS and mix well.
5. Wash the cells 2 times with cold HBSS.
6. Resuspend the cells in 500 µL of cold HBSS, keep the samples at 4 °C, and analyze immediately using a fluorescence microscope equipped with a Cy5 filter set.

Note: For fluorescence microplate readers, monitor the fluorescence intensity at Ex/Em = 640/680 nm (Cutoff = 660 nm).

DISCLAIMER

AAT Bioquest provides high-quality reagents and materials for research use only. For proper handling of potentially hazardous chemicals, please consult the Safety Data Sheet (SDS) provided for the product. Chemical analysis and/or reverse engineering of any kit or its components is strictly prohibited without written permission from AAT Bioquest. Please call 408-733-1055 or email info@aatbio.com if you have any questions.