

LumiLys Series: LumiLys 670

1. Product description

1.1 Introduction

LumiLys 670 is a silica-based nanoparticulate fluorescent label. LumiLys 670 is designed for cellular in vivo labeling but it can be also observed using an epifluorescent microscope. LumiLys 670 belongs to the LumiLys Series which includes, LumiLys 780 and LumiLys Dual 670-780 products with various surface functionalizations available for each. LumiLys 670 can be used with any devices which require fluorescence properties (FACS, epifluorescence microscopy...).

LumiLys 670 resists to common fixative aldehyde solutions and therefore can be used before fixation.

1.2 Product format and storage

LumiLys 670 is supplied as a dried powder. Suspension (1 mg/mL) in glucose (5%), or in another solution on demand, has to be reconstituted by mixing the dried powder and the medium furnished, followed by sonication.

Dry nanoparticles can be preserved indefinitely in the absence of light.

LumiLys 670 suspension can be stored for a long time at -18°C (or minus) after being sonificated to ensure a good dispersion stability.

Nanoparticles in suspension (water or glucose) should be used within 7 days and strongly sonificated just before using to ensure a good dispersion.

1.3 Quality control

LumiLys 670 is tested to ensure lot-to-lot consistency. Size of the nanoparticles is examined by Transmission Electron Microscopy.

Fluorescence quality is controlled by spectrophotometry.

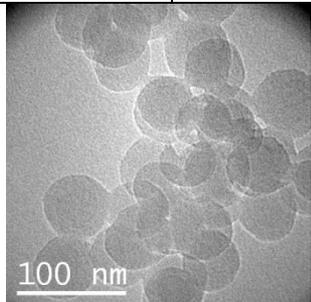
1.4 Security

For laboratory and animal research use only. Not for human or animal therapeutic or diagnostic use. Make sure to carefully observe the legislation on animal experimentation.

2. Characteristics

2.1 Physico-chemical characteristics

Crystalline Phase	Morphology	Size
	Amorphous silica	Spherical

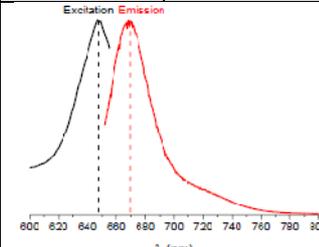


Available functions: NH₂

PEG
COOH
Azide
PEG-COOH
PEG- NH₂
PEG-NHS
PEG-biotin

Other functions on demand

2.2 Photo-physical characteristics

Main excitation	Main emission	Photo-physical data
647nm	670nm	- Molar extinction coefficient : $\epsilon = 271\,000\text{cm}^{-1}\cdot\text{M}^{-1}$
		- Quantum yield : $\Phi = 0.28$ Brightness = 75 880

Best excitation is obtained at 647 nm. Main emission is centered on 670 nm.

3. How to use LumiLys 670

LumiLys 670 is supplied as dried powder or as a suspension in glucose at a concentration of 1 mg.mL⁻¹ corresponding to 1,67.10⁻³ mol.L⁻¹ of SiO₂.

To ensure a good dispersion of the nanoparticles in the suspension, it is strongly recommended to sonicate the vial for 5 to 10 minutes prior to any uses.

LumiLys 670 can be diluted in water, glucose (5%), or culture medium. Avoid use of phosphate buffer saline which causes aggregation effects.

4. Cell labeling with LumiLys 670

LumiLys products contain no preservatives. Avoid any microbial contamination during use.

It is strongly recommended to test different amounts of LumiLys 670 per cell, measured as µg/cell. At high concentration LumiLys 670 should induce some toxic effect.

Here is a general protocol for labeling cells in vitro:

- Define the amount of LumiLys 670 per cell and multiply this amount with the number of cells to be labeled.
- Vortex or sonicate the vial of LumiLys 670 for 1 to 5 minutes.

- Dilute LumiLys 670 in sterile water to obtain desired concentration.
- Add LumiLys 670 to the cell culture and incubate for 8 to 24 hours depending on the cell line.

Usually, dilution of LumiLys 670 with culture media in ratio 1/10 gives good labelling without toxic effect (0,1 mg/ml).

LumiLys 780 can be also directly injected in the systemic blood stream using highly concentrated Pegylated solution (200 µl at 3mg/ml for mouse).

Please contact us for any additional advice: contact@chromalys.fr

5. References

Cousinié S., Mauline L., Gressier M., Kandibanda S.R., Datas L., Reber C., Menu M.J., Bulk or surface grafted silylated Ru(ii) complexes on silica as luminescent nanomaterials. (2012) *New Journal of Chemistry*, vol. 36 (n° 6). pp. 1355-1367

6. Related products

LumiLys 450
LumiLys 525
LumiLys 650
LumiLys 780
LumiLys Dual 670-780