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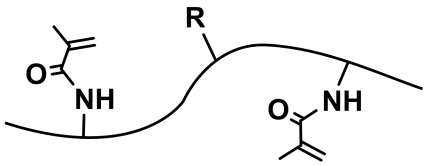
Fluorescent Gelatin Methacryloyl

Product Component

Item	Character	Package Size	Notes
A: Fluorescent GelMA	Spongy	0.5g/bottle	Keep in dark
B: Photoinitiator LAP	White powder	0.025g/bottle	

This instruction applies to EFL-GM-RF/GF/BF



Fluorescent GelMA molecular structure **R = Fluorescent molecular**

Product Fluorescent Data

Type	Excitation Wavelength	Emission Wavelength	Fluorescence Color
EFL-GM-BF-30/60/90	429nm	495nm	Blue
EFL-GM-GF-30/60/90	492nm	568nm	Green
EFL-GM-RF-30/60/90	552nm	618nm	Red

Product Introduction

Gelatin Methacryloyl (GelMA) is an olefin double bond modified gelatin. It can be quickly photo-crosslinked and cured into gel through UV and visible light in the presence of a photoinitiator. GelMA photo-crosslinked hydrogel combines the characteristics of both natural and synthetic biomaterials. With the three-dimensional (3D) structure, it is suitable for cell growth and differentiation. Fluorescent GelMA has a specific color by changing the type of fluorescent molecule that is chemically grafted on the GelMA molecule. The chemical labeling solve problems in physical mixing and electrostatic adsorption methods, where fluorescent molecules diffuse from the matrix. While overcoming the barrier of uneven imaging of fluorescent particles. The biocompatibility of fluorescent GelMA enables applications in vivo/vitro imaging, tracing, material degradation, biosensing, and 3D printing processes.

Applications

Tracing, Vivo/Vitro imaging, Cell culture, Coating, Biological 3D printing, Tissue engineering, etc.

Storage

Dry kit: room temperature, 3 months; 4℃, 12 months; -20℃, 18 months. **Sterile solution**:4°C (in dark),7 days;-20 ℃ (in dark),6 months. **Please note that repeated freezing and thawing of the solution will affect the performance of the product, so it is best to prepare it when using it.**

Period of validity

The date of manufacture is shown in the package.

Solution preparation

Step1. Prepare the initiator standard solution (0.25%(w/v), 2.5mg/ml)

(1) Add 10ml PBS into the brown bottle containing initiator LAP (containing 0.025g LAP);

(2) Heat and dissolve the solution in a water bath at 40-50℃ for 15 minutes, shaking several times.

The LAP standard solution can be stored for 12 months at 4°C in dark.

Step2. Prepare the fluorescent GelMA solution (It is recommended that the concentration of fluorescent GelMA be 5-30%(w/v), 50-300mg/ml)

(1) Take the required mass of fluorescent GelMA into the centrifugal tube;

(2) Add the initiator standard solution into the centrifuge tube, and shake to fully infiltrate the fluorescent GelMA;

(3) Heat and dissolve the tube in a 40-50℃ water bath for 30 minutes, protected from light, shaking several times;

(4) Sterilize the fluorescent GelMA solution immediately with a 0.22μm sterile needle filter (to prevent gelation at low temperatures).

Suggestions for 2D cell culture

- Keep fluorescent GelMA solution at 37℃ water bath protected from light (to prevent cryoablation);
- Inject fluorescent GelMA solution into the well plate immediately;

(96-well plate: 50-100μL/ well, 48-well plate: 100-300μL/ well, 24-well plate: 300-500μL/ well)

- Irradiate the wells with 405nm light for 10-30 seconds to gelate, the gel strength can be adjusted by the time and intensity of the light;
- Add medium to the wells to cover the gel. Place the well plate in a 37℃ incubator for 5 minutes. And then wash the sample and remove the medium;
- Add the cell suspension to the well plate. Change medium, observe, and photograph according to experimental design. (No special requirements for operation procedures).

Suggestions for 3D cell culture

- Cells were collected and resuspended in pre-warmed fluorescent GelMA solution at 37℃ to prepare the cell suspension;
- Add cell suspension into the well plates;
  (96-well plate: 50-100μL/ well, 48-well plate: 100-300μL/ well, 24-well plate: 300-500μL/ well)
- Irradiate the wells with 405nm light for 10-30 seconds to gelate, the gel strength can be adjusted by the time and intensity of the light;
- Add medium to the wells. Place the plate in a 37℃ incubator for 5 minutes. And then wash the sample and remove the medium;
- Add fresh medium and incubate for a long time. Change medium, observe, and photograph according to experimental design. (No special requirements for operation procedures).

Notes: Fluorescence intensity is positively correlated with the concentration of the reagent solution, which could be reduced by mixing fluorescent GelMA with normal GelMA.

Tips: Do not look directly at the light source.