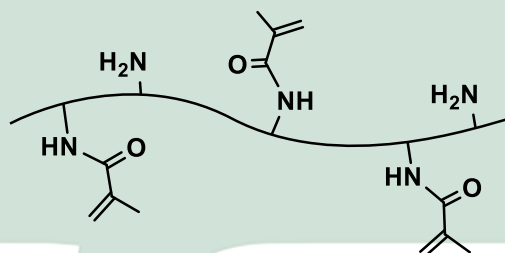


## Gelatin Methacryloyl (GelMA)

### Product component

Item	character	Package Size	备注
A: GelMA	White spongy	1 g/bottle	Keep in dark
B: Photoinitiator LAP	White powder	0.05 g/bottle	

This instruction applies to EFL-GM-30/60/90



GelMA molecular structure

### Product introduction

Gelatin Methacryloyl (GelMA) can be quickly photo-crosslinked into hydrogel through UV and visible light in the presence of photoinitiator. GelMA hydrogel combines the characteristics of both natural and synthetic biomaterials. With the three-dimensional (3D) structure, it is suitable for cell growth and differentiation. GelMA hydrogel has excellent biocompatibility and cell-responsive properties, such as providing suitable cell adhesion sites and proteolytic degradability. Therefore, it often is used as a replacement for artificial basement membranes or other natural collagen hydrogels. In addition, GelMA hydrogel also has good mechanical properties.

### Applications

Cell culture, bio 3D printing, tissue engineering, etc.

### Storage

**Dry kit:** room temperature, 3 months; 4°C, 12 months; -20°C, 18 months. **Sterile solution:** 4°C (in dark), 7 days; -20°C (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

### 1. Prepare 0.25% (w/v) standard solution of initiator

- (1) Add 20ml PBS into the brown bottle containing initiator LAP (containing 0.05g LAP);
- (2) Heat and dissolve the solution in a water bath at 40-50°C for 15 minutes, shaking several times.

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

### 2. Prepare GelMA solution (5-30% (w/v) is recommended)

- (1) Take the required mass of GelMA into the centrifugal tube;
- (2) Add the initiator standard solution into the centrifuge tube, and shake to fully infiltrate the GelMA.;
- (3) Heat and dissolve the tube in a 60-70°C water bath for 20-30 minutes, protected from light, shaking several times;
- (4) Sterilize the GelMA solution immediately with a 0.22 $\mu$ m sterile needle filter (to prevent gelation at low temperatures).

## Suggestions for 2D cell culture

- Keep GelMA solution at 37°C water bath protected from light (to prevent cryoablation);
- Inject GelMA solution into the well plate immediately;  
(96-well plate: 50-100  $\mu$ L/ well, 48-well plate: 100-300  $\mu$ L/ well, 24-well plate: 300-500  $\mu$ L/ well)
- Irradiate the wells with 405 nm 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°C 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 GelMA solution at 37°C to prepare the cell suspension;
- Add cell suspension into the well plates;  
(96-well plate: 50-100  $\mu$ L/ well, 48-well plate: 100-300  $\mu$ L/ well, 24-well plate: 300-500  $\mu$ L/ well)

- Irradiate the wells with 405 nm 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°C 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).

**Tips: Do not look directly at the light source.**

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