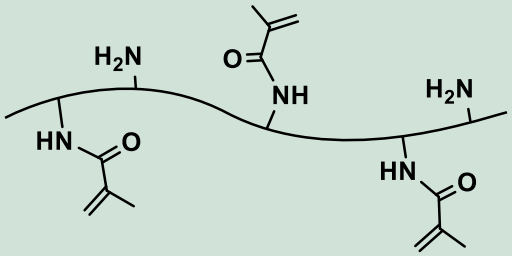
# Gelatin Methacryloyl（GelMA）

## Product component

| Item | character | Package Size | 备注 |
|---|---|---|---|
| A： GelMA | White spongy | 5 g/bottle | Keep in dark |

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℃, 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。

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## Solution preparation

**1. Prepare 0.25% (w/v) standard solution of initiator（Recommended use of EFL in the sale of photoinitiator: Item EFL-LAP）**

The required mass of LAP was added to PBS solution, and 0.25% (w/v) initiator standard solution was obtained by heating and dissolving in a water bath at 40-50℃.

**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℃ water bath for 20-30 minutes, protected from light, shaking several times;

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

## Suggestions for 2D cell culture

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

(96-well plate: 50-100 μL/ well, 48-well plate: 100-300 μL/ well, 24-well plate: 300-500 μL/ 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℃ 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℃ to prepare the cell suspension;
- Add cell suspension into the well plates;

(96-well plate: 50-100 μL/ well, 48-well plate: 100-300 μL/ well, 24-well plate: 300-500 μL/ 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℃ 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.**

Scan the QR code on the right for more information

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