Engineering For Life
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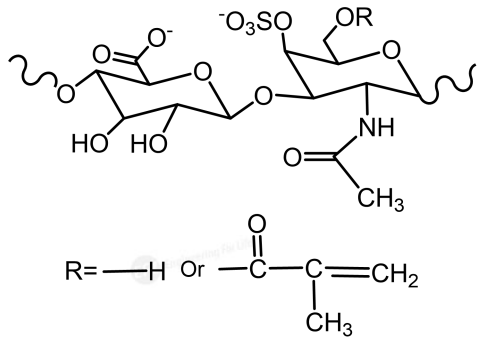
20250509

Chondroitin Sulfate Methacryloyl （ChSMA）

Product component

Item	Character	Package Size	Notes
A： ChSMA	White spongy	0.5g/bottle	Keep in the dark
B： Photoinitiator LAP	White powder	0.025g/bottle	

This instruction applies to EFL–ChSMA–001



ChSMA molecular structure

Product introduction

Chondroitin sulfate methacryloyl (ChSMA) is a double bond modified chondroitin sulfate and can be quickly photo–crosslinked and cured into gel through UV and visible light in the presence of a photoinitiator. Due to the convenient cross–linking method and good biocompatibility, ChSMA–based material systems have been widely used in many biomedical research fields, including: osteoarthritis treatment, joint cartilage repair, skull repair, etc. Chondroitin sulfate (ChS) is rich in carboxyl groups and hydroxyl groups that are easily modified and can be used to build a variety of biomaterials, such as nanodrug carriers and bioadhesives for tumor diagnosis and treatment.

Applications

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

Storage

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

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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 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 the dark.

2. Prepare ChSMA solution (4–10% (w/v) is recommended)

(1) Take the required mass of ChSMA into the centrifugal tube/glass bottle/beaker;

(2) Add the initiator standard solution into the above container;

(3) Dissolve the solution at room temperature for 30 minutes, protected in the dark, shaking several times;

(4) Sterilize the ChSMA solution with a 0.22μm sterile needle filter, keep in the dark.

Suggestions for 2D cell culture

- Inject ChSMA solution into the well plate;
  (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

- Collect and resuspend cells in ChSMA solution 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).

Tips: Do not look directly at the light source.