Instructions for use

hPLMA Easy - Ready-to-use Photopolymerizable Hydrogel

hPLMA Easy is a ready-to-use solution at 15% (w/v) of human Platelet Lysate Methacrylated (hPLMA – Ref: PL01) that includes Lithium phenyl-2,4,6-trimethylbenzoylphosphinate (LAP – Ref: PH01) as photoinitiator for convenient and reproducible photocrosslinking. This formulation eliminates the need for photoinitiator preparation and mixing, streamlining the hydrogel preparation process for applications in 3D cell culture, tissue engineering, and regenerative medicine.

hPLMA Easy, as its precursor hPLMA (PL01), includes human platelet lysates chemically modified with photoresponsive methacrylate groups, enabling polymerization upon light exposure. To initiate this process, a photoinitiator is required and for that hPLMA Easy contains 0.5% (w/v) of LAP (Ref: PH01) dissolved in PBS, making it suitable for direct use in photocrosslinking workflows.

hPLMA Easy was formulated to be READY-TO-USE !

Composition

- **hPLMA**: Methacrylated human platelet lysate 15% (w/v).
- **Photoinitiator**: LAP (0.5% w/v in PBS).

Instructions for cell encapsulation in hPLMA Easy hydrogels

1. Prepare cell cultures as recommended by the cell supplier to establish a stable population.
2. Warm hPLMA Easy at room temperature or in a water bath at 37 ºC.
3. Harvest cells from the culture and centrifuge the desired cell density.

§ **Note:** Cell density may vary by cell type and assay purpose. Please consult the literature or cell provider to identify the best cell density.

4. Centrifuge the amount of cells needed for the total number of conditions and gel volume previously established.
5. Remove **all the supernatant** from the cell suspension until you obtain a dry cell pellet.

⚠ **Note: If you don't remove all the supernatant, it will affect the final hPLMA Easy solution concentration.**

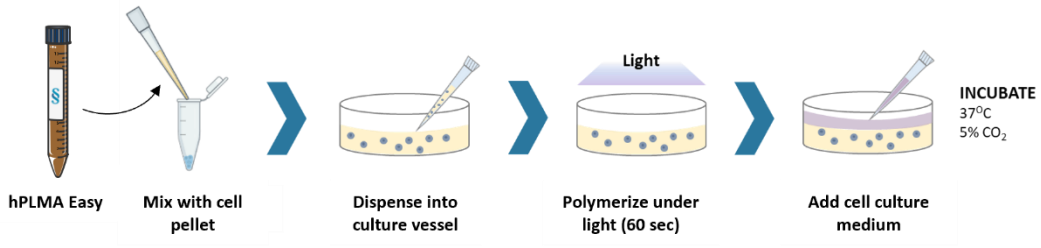
6. Resuspend the cell pellet in hPLMA Easy solution and mix by pipetting.
7. Pipette the cell suspension to an adequate culture platform.
8. Polymerize the hydrogel by exposing it to a suitable light source for an appropriate duration. Exposure time and intensity may need to be optimized depending on your specific application and setup.

⚠ **Please ensure that your light source emits within the appropriate wavelength range for LAP activation, typically between 365–405 nm. Using a light source outside this range may result in inefficient or incomplete polymerization.**

§ **Example:** The recommended exposure time for a volume of 50 µL is ~60 seconds. If you are working with a higher/lower volume, please adjust the exposed time accordingly.

After the exposed time, confirm that you have a hydrogel!

9. Add adequate volume of pre-warmed cell culture media to the culture vessel and place the culture platform in the incubator with the appropriate conditions for cell culturing (e.g. 37°C in a humidified environment with 5% CO2).



Instructions for cell culture in hPLMA Easy hydrogel coatings

1. Prepare cell cultures as recommended by the cell supplier to establish a stable population.

2. Add sufficient volume of hPLMA Easy to completely cover the growth surface. **If needed**, discard the excess of the cover hPLMA Easy solution.

3. Eliminate any air bubbles that may have formed with the aid of a sterile needle.

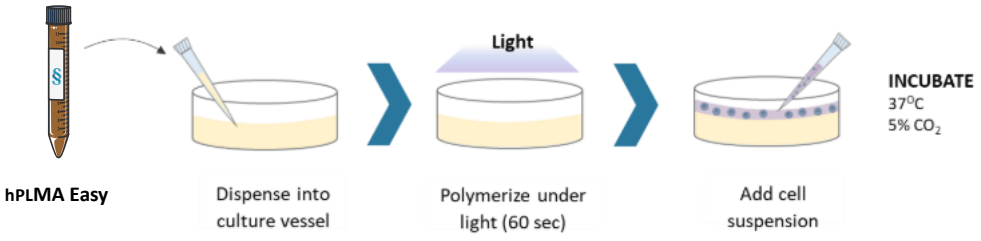
4. Polymerize by exposing to an adequate light source for an adequate exposure time.

Please ensure that your light source emits within the appropriate wavelength range for LAP activation, typically between 365–405 nm. Using a light source outside this range may result in inefficient or incomplete polymerization.

§ **Example:** The recommended exposure time for a volume of 50 µL, when working with LAP, is ~60 seconds. If you are working with a higher volume, please adjust the exposure time accordingly.

5. Harvest cells from the culture and pipette the desired cell density to the top of the hydrogel.

§ **Note:** Cell density may vary by cell type and assay purpose. Please consult the literature or cell supplier to identify the best cell density.



Final Notes for hPLMA Easy:

- No additional photoinitiator is needed.
- Do not expose to light prior to use to avoid premature polymerization.
- hPLMA Easy can be used for bioprinting. Conditions for each bioprinter must be optimized by the operator.
- For custom formulations or specific applications, contact Metatissue technical support.

hPLMA Easy was designed to facilitate your cell culture!

Contact us

For additional information, please contact us:

support@metatissue.com

Metatissue

PCI · Creative Science Park Aveiro Region

Via do Conhecimento, Edifício Central

3830-352 Ílhavo, Portugal

https://www.metatissue.com/