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SURAT PENCATATAN CIPTAAN

Dalam rangka pelindungan ciptaan di bidang ilmu pengetahuan, seni dan sastra berdasarkan Undang-Undang Nomor 28 Tahun 2014 tentang Hak Cipta, dengan ini menerangkan:

Nomor dan tanggal permohonan	:	EC002025040777, 22 April 2025
Pencipta		
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Kewarganegaraan	:	Indonesia
Jenis Ciptaan	:	**Buku Panduan/Petunjuk**
Judul Ciptaan	:	**Larger Size 3D Collagen Coated PLLA Scaffold**
Tanggal dan tempat diumumkan untuk pertama kali di wilayah Indonesia atau di luar wilayah Indonesia	:	9 April 2025, di Kota Adm. Jakarta Barat
Jangka waktu pelindungan	:	Berlaku selama hidup Pencipta dan terus berlangsung selama 70 (tujuh puluh) tahun setelah Pencipta meninggal dunia, terhitung mulai tanggal 1 Januari tahun berikutnya.
Nomor Pencatatan	:	000881038

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Surat Pencatatan Hak Cipta atau produk Hak terkait ini sesuai dengan Pasal 72 Undang-Undang Nomor 28 Tahun 2014 tentang Hak Cipta.

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- Move the Poly-L-Lactic Acid (PLLA) raw material (crystal pellet) from the refrigerator (4°C) and place it inside a desiccator (vacuum condition) at room temperature for 1 hour
- Then, weigh 1.6 gram of PLLA/test tube (total: 6 tubes=9.6 gram) and add 1.5 ml of chloroform into each tube, then seal it with aluminum foil and rubber band.
- Incubate the tubes inside orbital shaker incubator at 37°C, and shake (200 rpm) for around 5 hours
  (!) Close any window to avoid light exposure during incubation (light sensitive).
- Add another 2 ml of chloroform into each tube after the first 30 minute of incubation, then continue with the incubation process
- After 3-4 hours of incubation, add another 5 ml of chloroform into each tube, continue the incubation
- After 5 hours, check the tubes, if the PLLA pellets are already completely dissolved, stop the incubation and vortex the PLLA solutions;
  If the pellets are still visible, continue the incubation until all the pellets dissolved completely
- Weigh 41.4 gram NaCl particulates (355 to 425 µm) and pour it into an aluminum pan (12 x 10 cm), then pour the PLLA solutions (6 tubes) gently and mixed them quickly and thoroughly using spatula inside a fume hood
- After mixing, tap the aluminum pan repeatedly to release air bubble
- Allow chloroform to evaporate by air-drying for more than 24 h inside fume hood
- Detach the PLLA/NaCl composites from the aluminum pan by gently peel off the aluminum pan; turn over the composites and place it in a new aluminum pan and let it dry for the rest of the 24 h
- Place the composites inside an aluminum tray into the vacuum drying oven with pressure -0.1 MPa for 3 days
- After completely dried, the composites are undergoing the salt leaching process by placing composites into beaker glass and soaking it with water and degassing the sponge (submerged in water on beaker glass) using vacuum freeze dryer machine until the composites can absorb the water.
- After degassing process, the water in the beaker glass is replaced every hour (around 20 times)
- Then, the sponges are dried with paper towel until no more wet spots on the paper towel
- Air dried the sponges inside the fume hood for overnight
- The large PLLA scaffold is formed after drying, weigh the sponge (target: <9.6 gram); If more than 9.6 gram wash the sponge again
- Trim the upper layer of the scaffold and cut it into 10x8 cm size
- Coat the PLLA scaffold with 0.5% collagen by degassing the scaffold (submerged in collagen solution)
- Remove the excess collagen using centrifuge at 2000 rpm, 5 minutes on each side of the scaffold
- Freeze the PLLA scaffold at -80°C for 4 hours, then vacuum freeze dry the scaffold at <5 Pa, for more than 24 hours

- Then the collagen coated PLLA scaffold is treated with plasma treatment process for 10 minutes and sterilize with H_2O_2 for 12 hours. After this process the PLLA scaffold is ready to use