AA temp 3D printing resin for temporary restorations

Version 1.1

AA temp is a biocompatible 3D printing material, developed by ENLIGHTEN MATERIALS Co., Ltd for the printing of temporary crowns and bridges using high resolution 3D printers. It has high flexural strength, low shrinkage and excellent cytocompatibility. It can be used for DLP and SLA 3D printers. The FDA certificate and CE approval of this material will be applied in 2018.

Procedures for post-processing

1. Printing

Pour AA temp resin into the resin tank of a 3D printer, and import the crown or bridge model into the 3D printer for printing.

2. Washing

Remove the printed crowns or bridges from the build platform and soak in IPA (isopropanol) or 95% ethanol to remove the extra resin. Use an ultrasonic cleaner if necessary. Please be aware that IPA and ethanol must NOT be placed directly in the tank of the ultrasonic cleaner.

3. Drying

Ensure the crowns or bridges clean. Do not remain liquid resin or ethanol.

4. Post-Curing

For post-curing, the curing energy and curing time depends on the post-curing unit. For example, a good surface hardness and biocompatibility can be achieved by 10 minutes of post-curing using a 36W (12W CCFL + 24W LED) UV curing box at 405nm or using Formlabs FormCure curing box at 405nm at 60°C for 15 minutes.

Sterilization

Sterilization of the printed crowns or bridges using 70% ethanol is recommended.

Material Properties

Property	Value
Flexural Strength	2330 MPa
Flexural Modulus	89.94 MPa

Hardness	75 Shore D
Viscosity	0.802 Pa·s

Biocompatibility testing (According to EN-ISO 10993-5:2009)

Sample	Received Date	Result 1: Morphology	Result 2: MTT assay	Average	Cytotoxicity
AA temp	2018.02.09	0	0	0	None

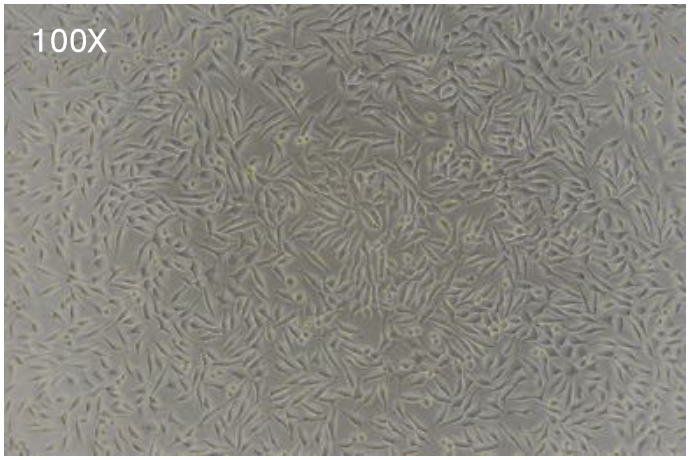
Cytotoxicity: 0 = None, 0~1 = Slight, 1~2 = Mild, 2~3 = Moderate, 3~4 = Severe.

Extraction medium condition

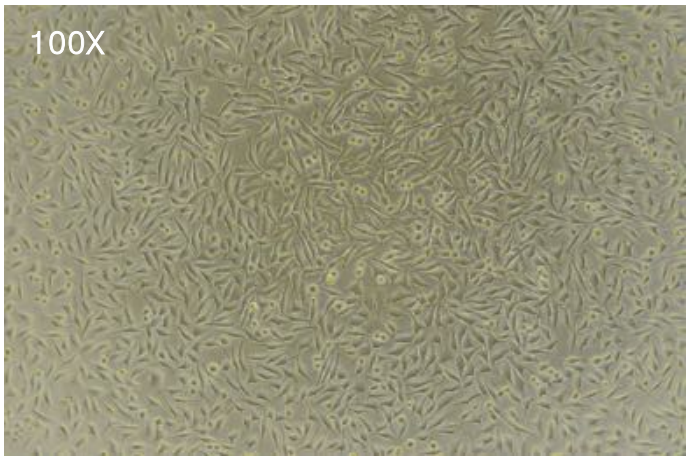
Sample	Received Date	Surface Area (cm^2)	Volume of Extraction Medium (ml)	Extration Temp (℃)
AA temp	2018.02.09	6	2	37

Qualitative morphological grading

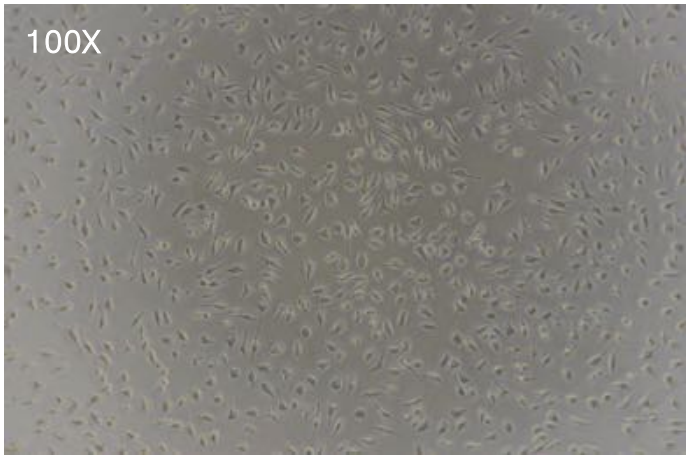
1. AA temp (0)



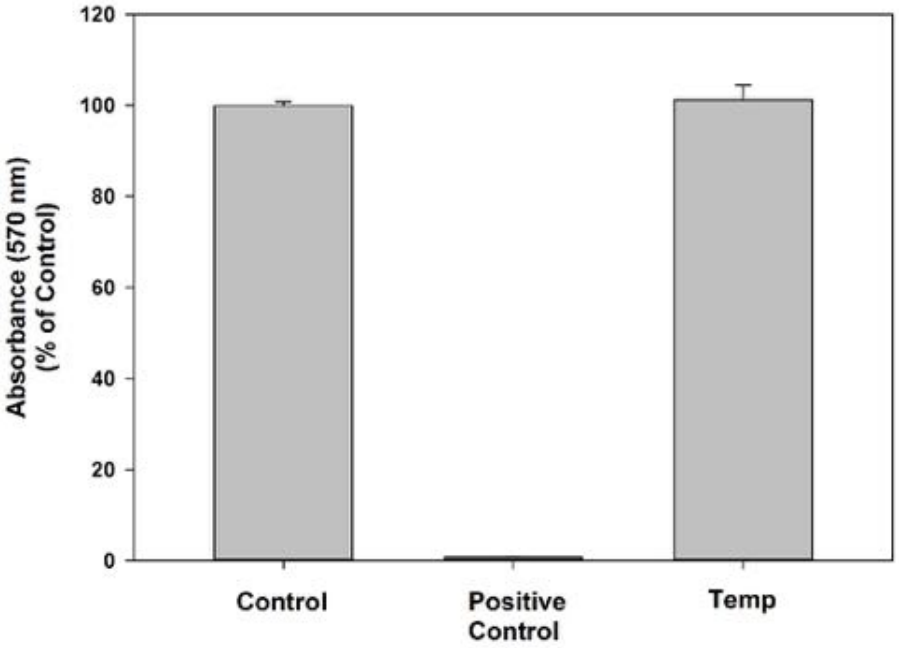
2. Negative Control (0)



3. Positive Control (4)



MTT cytotoxicity test



MTT test grading

Sample	Cytotoxicity (%)	MTT test grading
AA temp	-1.25 %	0
Positive Control	99.29 %	4

Grade: < 10% = 0 10~30% = 1 30~50% = 2 50~70% = 3 > 70% = 4