3D-Bioimplants Mimicking the Structure and Function of Spine Unit for the Treatment of Spinal Tuberculosis

Sarah Yahia¹, Islam A. Khalil², Monira G. Ghoniem³, Ibrahim M. El-Sherbiny^{1,*}

¹Nanomedicine Research Labs, Center for Materials Sciences, Zewail City of Science and Technology, 6th of October City, 12578, Giza, Egypt.

²Department of Pharmaceutics, College of Pharmacy and Drug Manufacturing, Misr University of Science and Technology (MUST), 6th of October, Giza 12582, Egypt.

³ Department of Chemistry, College of Science, Imam Mohammad Ibn Saud Islamic University (IMSIU), Riyadh 11623, Saudi Arabia.

*Correspondence to: <u>ielsherbiny@zewailcity.edu.eg</u>

Table S1. Finite element analysis (FEA) results particularly the Von Mises stress of the developed ABS 3Dprinting scaffold with 70% infill for both honeycomb (H) and grid (G) patterns after assuming different values of vertical force.

Applied Force	Von Mises stress (MPa)	
(N)	Honeycomb	Grid
1000	10.22	7.539
2000	20.34	15.08
3000	30.65	22.62
4000	40.86	30.16
5000	51.08	37.69
6000	61.29	45.23
7000	64.62	52.77
8000	81.73	60.31

Table S2. Finite element analysis (FEA) results particularly the Von Mises stress of the developed PLA 3D-printing scaffold with 70% infill for both honeycomb (H) and grid (G) patterns after assuming different values of vertical force.

Applied Force (N)	Von Mises stress (MPa)	
	Honeycomb	Grid
1000	11.04	13.09
2000	22.07	22.51
3000	33.11	33.76
4000	44.15	45.02
5000	55.18	56.27
6000	66.22	67.52
7000	77.26	78.78
8000	80.83	1.047×10^{2}