

### Supplementary Data

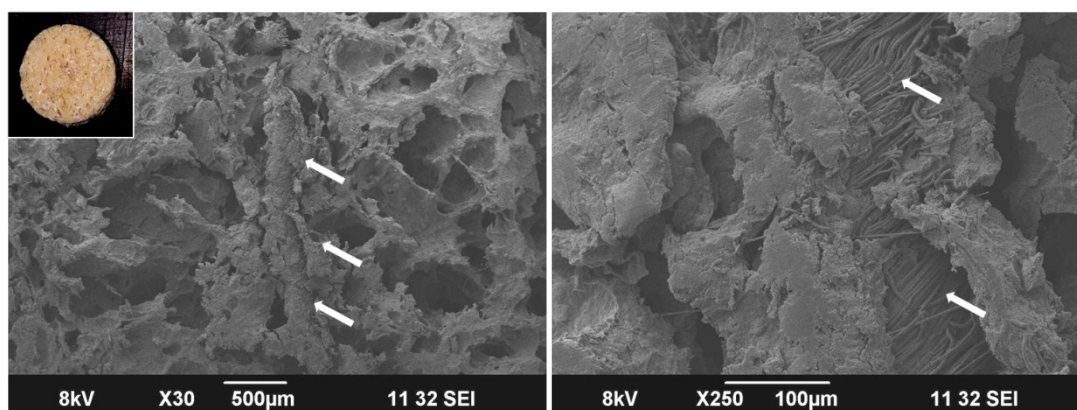


Figure S1. Scanning electron micrograph of nanocomposite fibrous scaffold under low (100x) and high magnification (1000x). White arrows: Nanofibers in the matrix. The photograph of the scaffold is given in the inset.

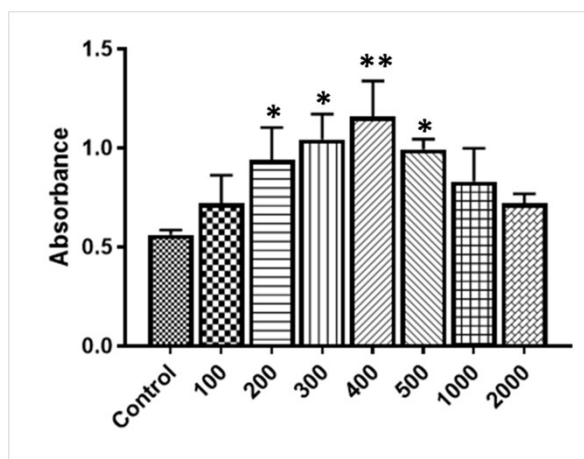


Figure S2. Cytotoxicity assay of MSCs treated with different concentrations of ONO-1301. ONO-1301 at certain concentration range could enhance cell viability in comparison to cells alone (\* -  $p < 0.05$  and \*\* -  $p < 0.001$ ).

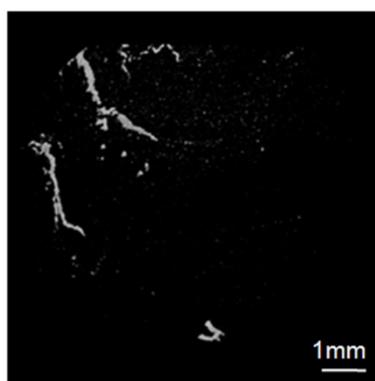


Figure S3. Representative micro-CT image showing vascularisation in the calvarial defect - Sham group.

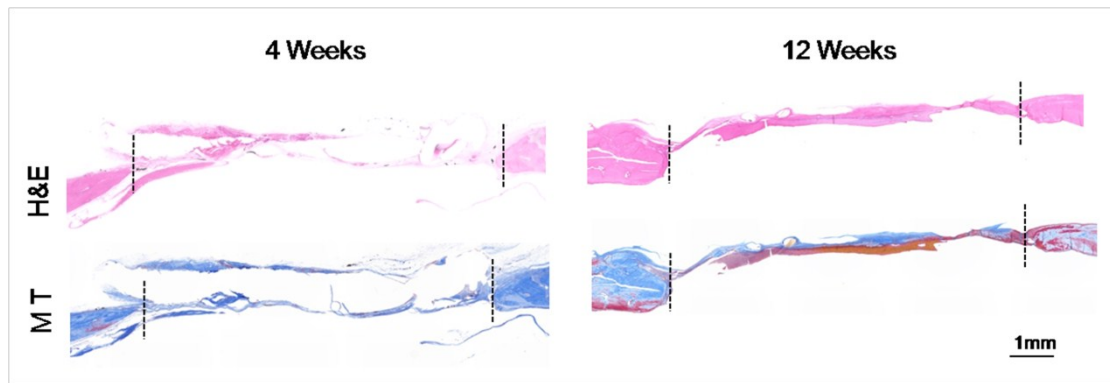


Figure S4. Histological analysis of tissue formation in sham group - Hematoxylin & Eosin (H&E) and Masson's Trichrome (MT) staining at 4 and 12 weeks. Adjacent sections of the same tissue in each group were stained with H&E and MT.