

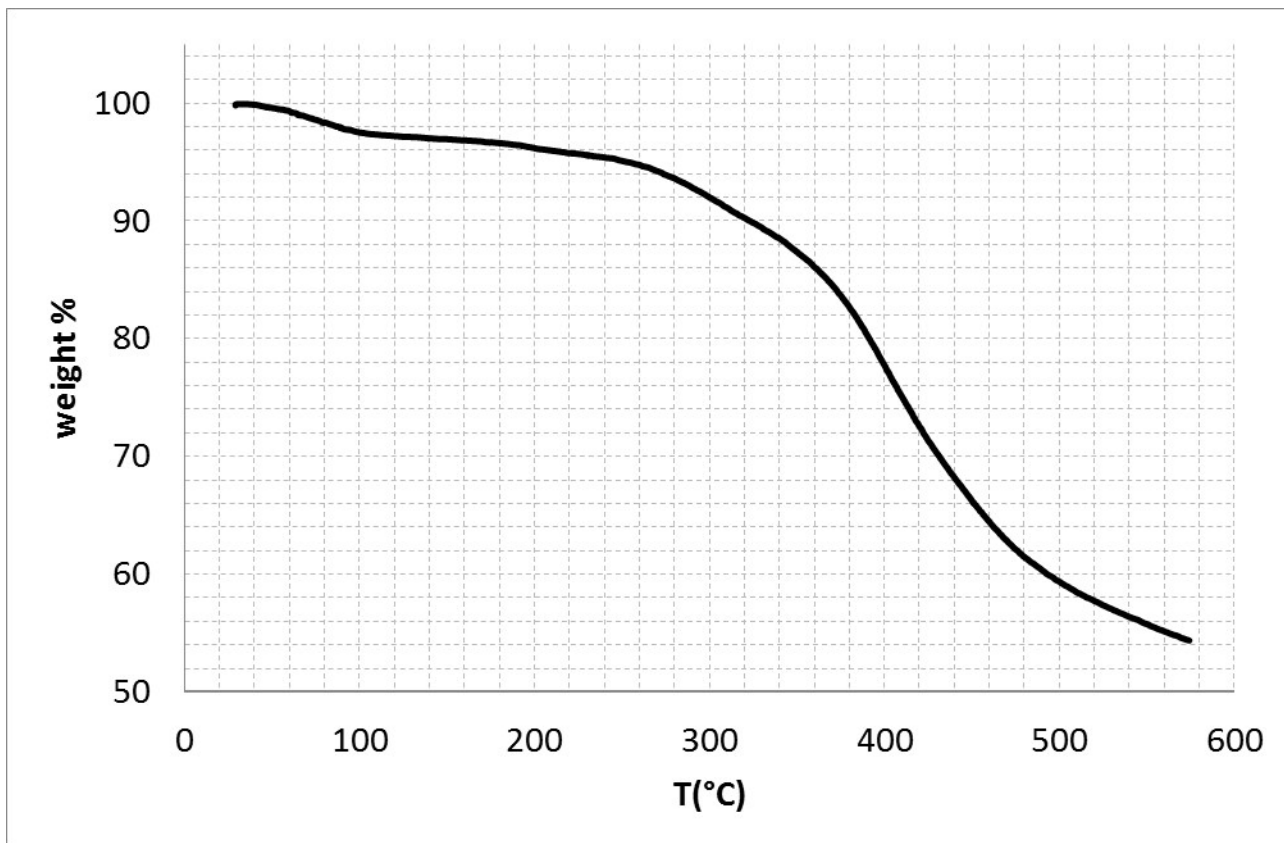
Electronic Supplementary Information (ESI) for the article

# Powering tyrosol antioxidant capacity and osteogenic activity by biocatalytic polymerization

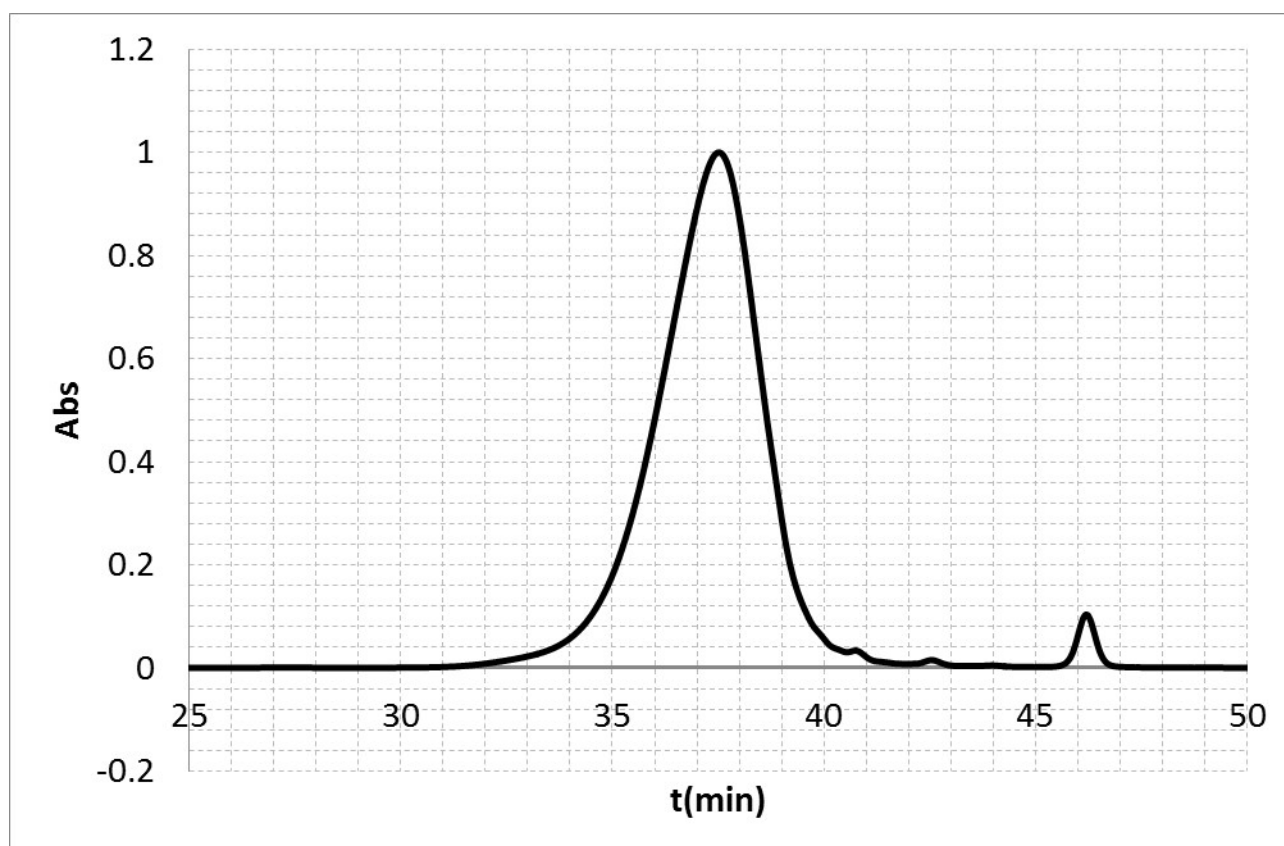
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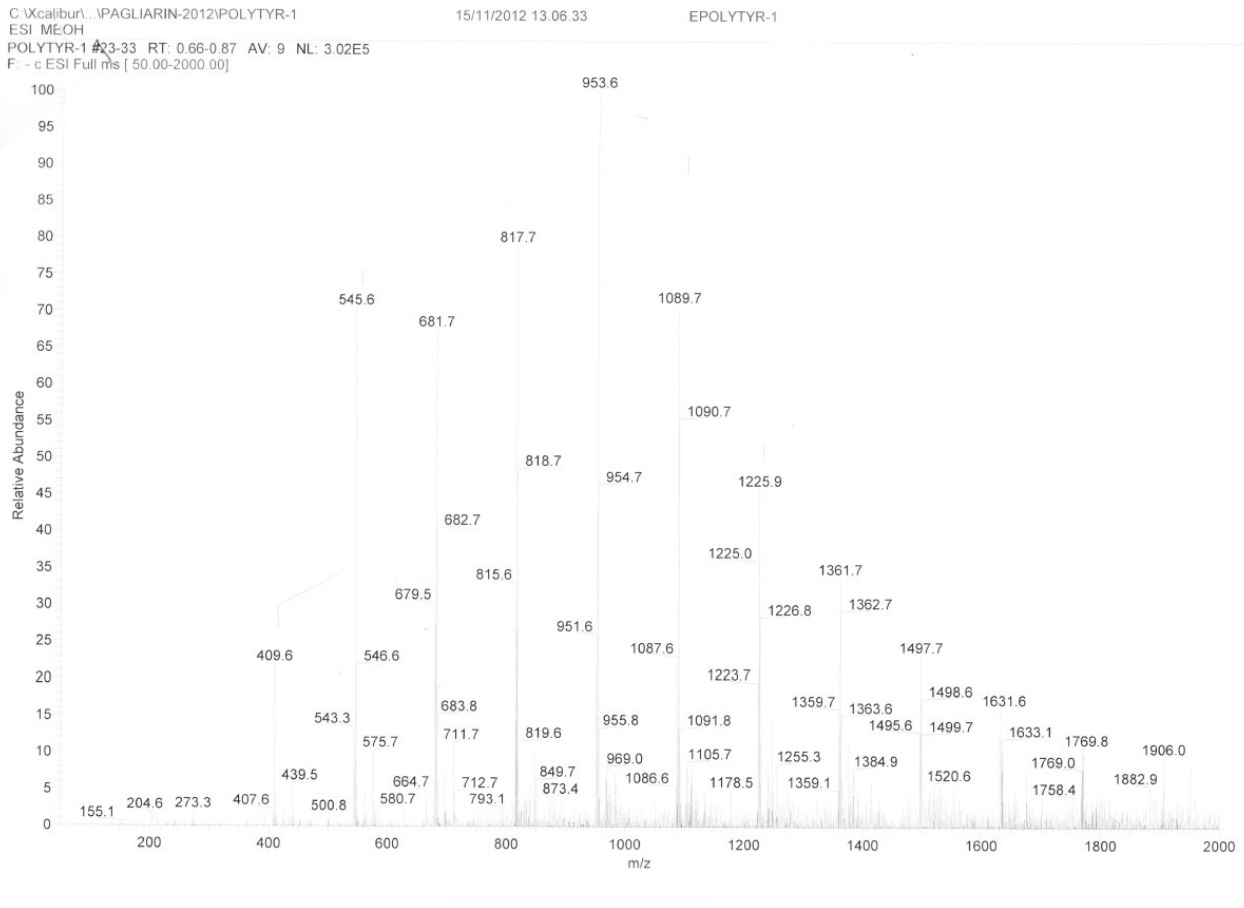


**Figure S1.** Thermogravimetric analysis (TGA) of OligoTyr.

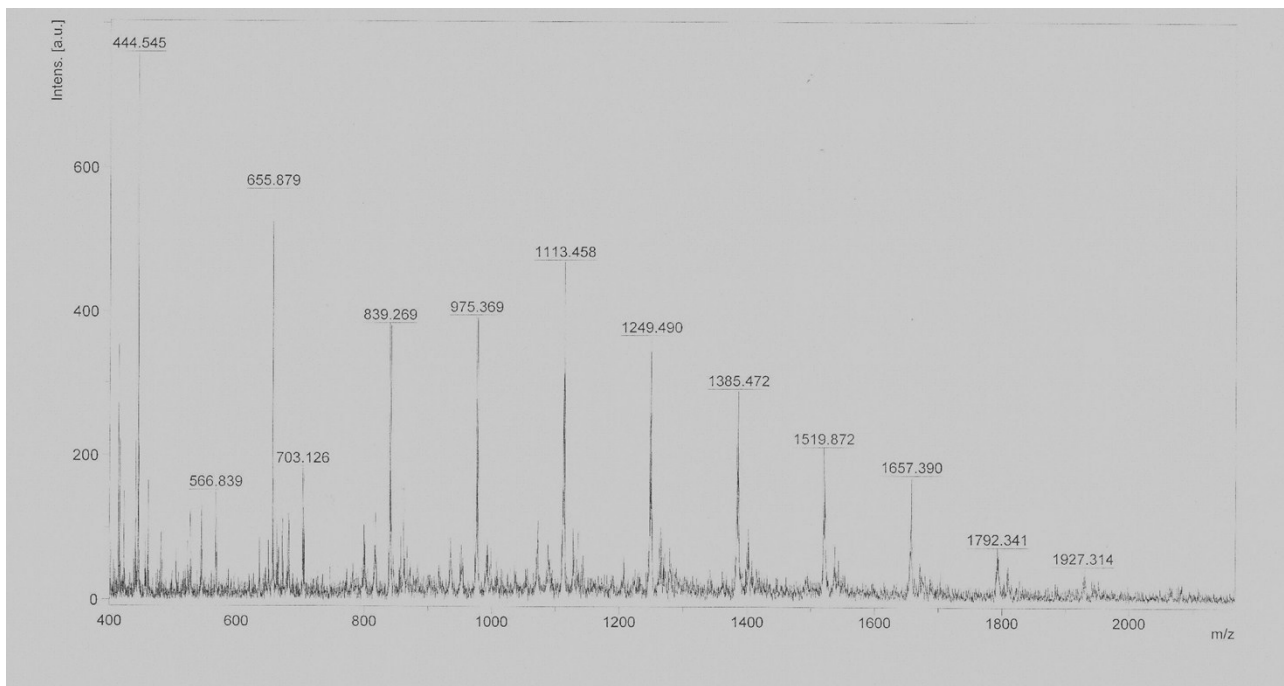


Mn =	2241
Mw =	2861
Mz =	4013
Mp =	2492
D =	1.277

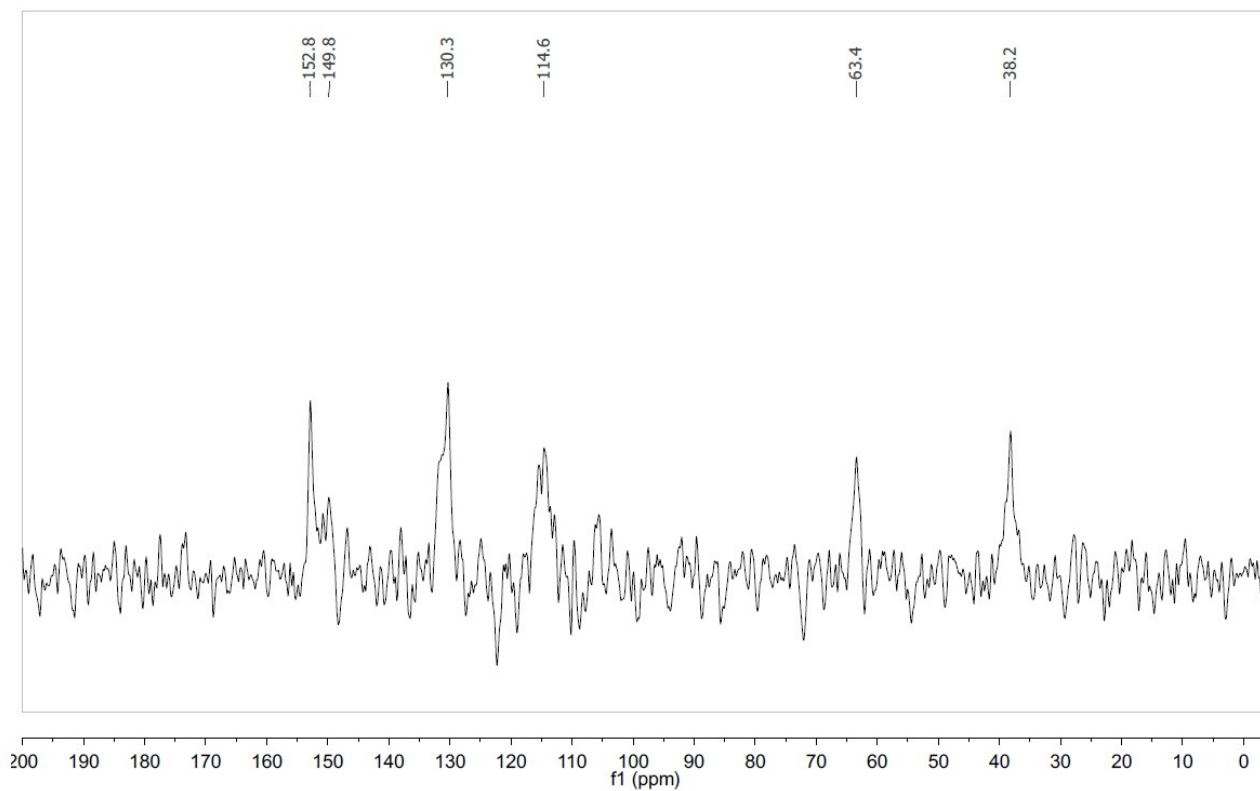
**Figure S2.** Non-aqueous size exclusion chromatography (SEC) profile of acetylated OligoTyr and molecular weight distribution parameters. The peak at 46 min is due to *o*-dichlorobenzene used as internal standard. Detection set at 280 nm. Mn= number average molecular weight; Mw= weight average molecular weight; Mz= size average molecular weight; Mp= peak average molecular weight; D= polydispersity index.



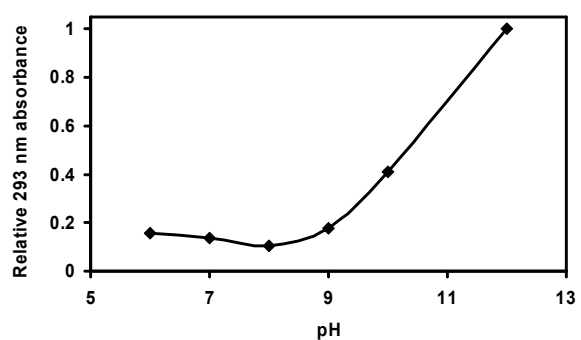
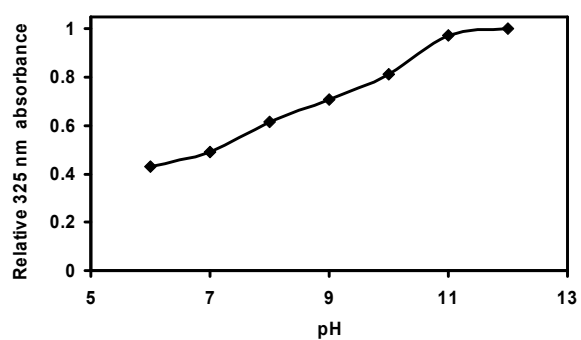
**Figure S3.** ESI(-)MS spectrum of OligoTyr.



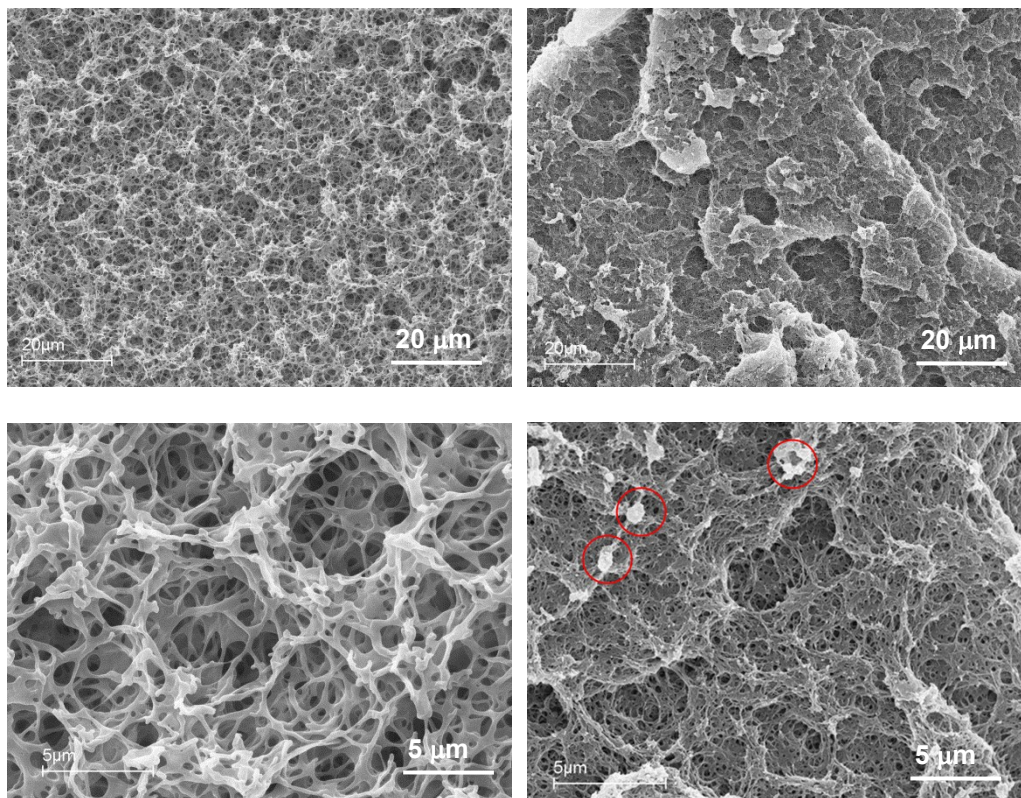
**Figure S4.** MALDI spectrum of OligoTyr.



**Figure S5.** Solid state CP-MAS  $^{13}\text{C}$  NMR spectrum of tyrosol.

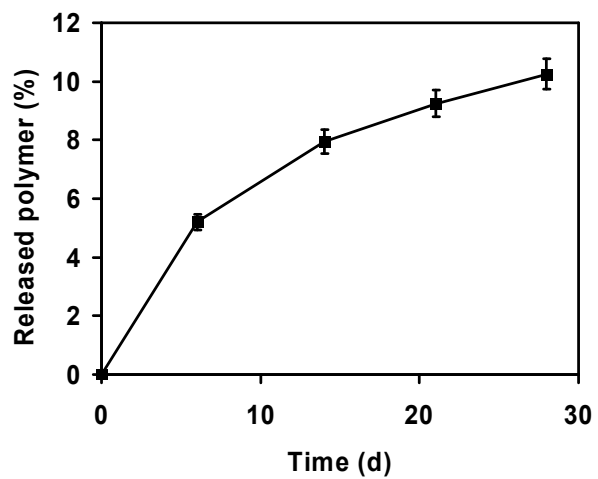


**Figure S6.** Relative absorption of OligoTyr (top) and tyrosol (bottom) as a function of pH. The chosen wavelengths correspond to the absorption maximum of dissociated OligoTyr (325 nm) and tyrosol (293 nm).



**Figure S7.** Top: SEM micrographs of scaffolds obtained from pure PLA (left) and PLA + 5% OligoTyr (right) prepared following method A (see main text). Bottom: close-up of the scaffolds shown in the upper row. OligoTyr crystals are shown in the red circles.





**Figure S8.** Release of OligoTyr from PLA scaffolds at 5% loading in PBS. Reported are the mean  $\pm$  SD values of three experiments.