Electronic Supplementary Material (ESI) for RSC Advances.

Electronic Supplementary Information of : **Towards efficient biocatalysts: photo-immobilization of a lipase on novel lysozyme amyloid-like nanofibrils**

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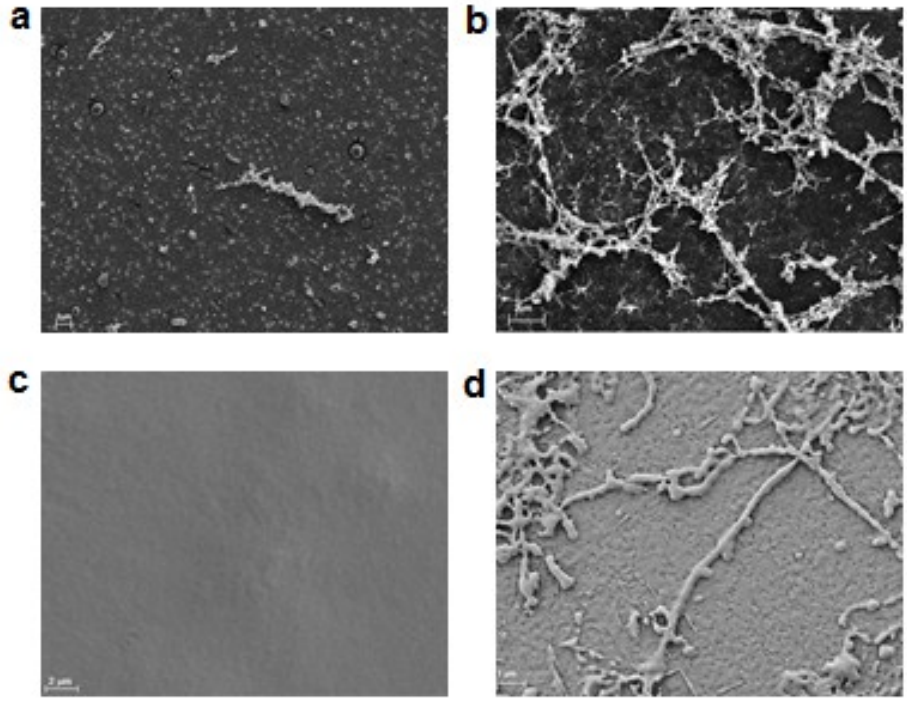

Figure S 1 a) Freshly prepared lysozyme or **b)** Heparin-induced amyloid-like fibril of lysozyme observed using variable pressure surface electron microscopy (SEM-VP) at 10.000x magnification. Fibrils were obtained after incubating lysozyme for 5 days with heparin at 37ºC, pH 7.4. **c)** and **d)** correspond to the same samples shown in a) and b) observed using conventional surface electron microscopy (SEM) at 50.000x magnification. Note that the globular particles observed in the background of a) and b) are an artifact arising from sample preparation. The absence of amorphous aggregate is better appreciated in c) and d).

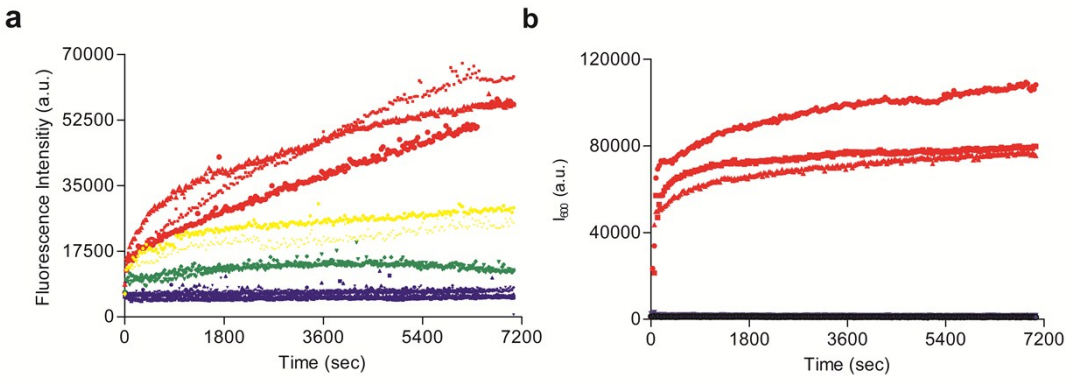

Figure S2 HEWL aggregation kinetics measured by **a)** thioflavin T fluorescence emission and **b)** second order light scattering at 600 nm (i.e. λ_{ex}=300 nm). For the aggregation process, 0.1 mg/ml HEWL was incubated alone (■) or in the presence of 0.050(■), 0.070(■) and 0.075 mg/ml (■) of heparin.

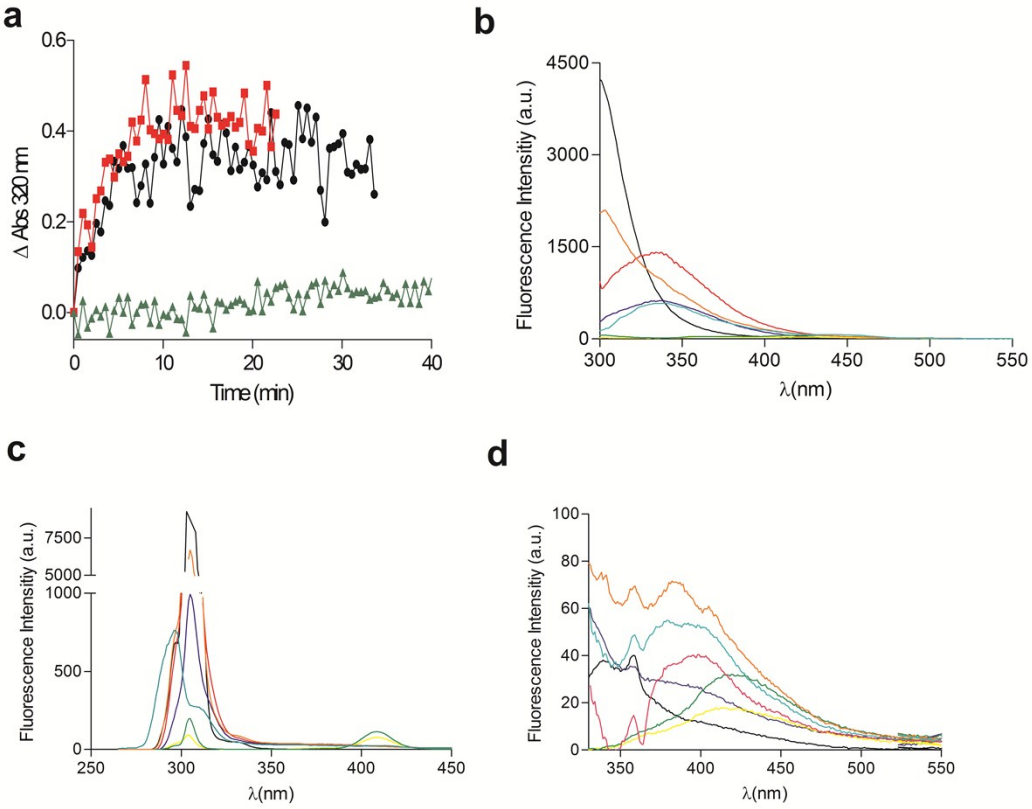

Figure S3 (a) Kinetic traces monitored by absorbance changes at 320 nm of blue-light photolyzed suspensions of 1 mg/ml lipase, 1 mg/ml of nanofibrils, 15 mM $[Ru(bpy)_3]^{2+}$, 3 mM $S_2O_8^{2-}$ alone (●), or with the addition of 0.2 mM ascorbic acid (■) or 4 mM ascorbic acid (①). **(b)** Fluorescence emission spectra observed by excitation at 295 nm of 20 mM HEPES containing 0.45% Triton X100 (■), lipase-nanofibrils suspension before blue-light photolyzed (■), lipase-nanofibrils + 15 mM $[Ru(bpy)_3]^{2+}$ before of blue-light photolyzed (■), lipase-nanofibrils + 15 mM $[Ru(bpy)_3]^{2+}$ + 3 mM $S_2O_8^{2-}$ after 20 min of blue-light photolysis (■), supernatant of previous suspension (■), insoluble material re-suspended in buffer HEPES:Triton X100 (■), and insoluble material re-suspended in buffer PBS pH 7.4. (■) **c)** Synchronic fluorescence emission spectra observed with $\Delta\lambda$=15nm for same samples mentioned above in b). **d)** Fluorescence emission spectra of sample observed in b) and c) with the substraction of buffer PBS to original spectra of insoluble material resuspended in PBS (■).