Supplementary Information for

Tuning the release kinetic of ketoprofen from poly(L-lactic acid) suture using supercritical CO_2 impregnation process

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Supporting information a: Evolution of the Ultimate strength and of the Young Modulus after different time of immersion for the PLLA fiber impregnated with ketoprofen for the study of the tensile strength loss

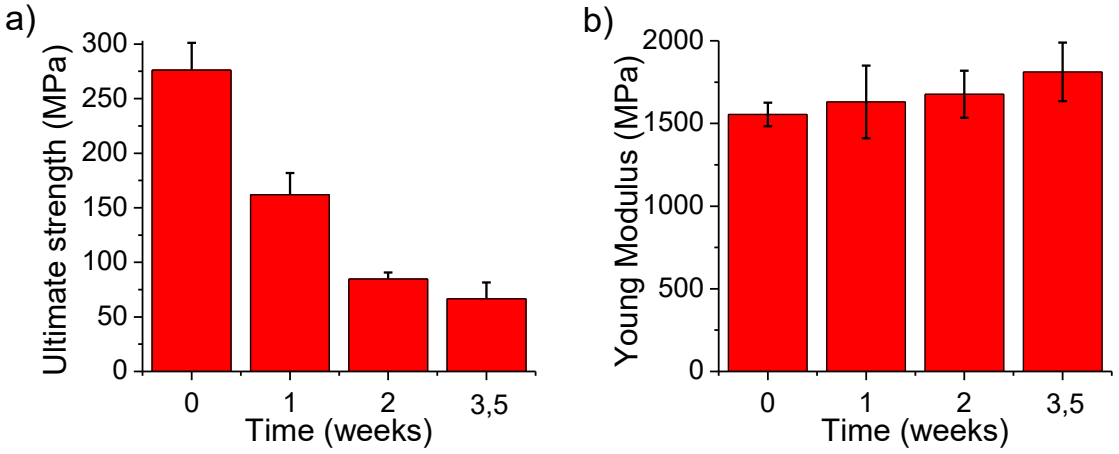


Figure s1: Evolution of a) ultimate strength and b) Young Modulus with degradation time in PBS for the PLLA fiber impregnated with ketoprofen (Drug Impregnation=11.2%)

Supporting information b: Coating

SEM images of the coating of the fibers after different time of immersion into PBS are presented in figure s2 for the first kind of coating (fibers A, B and C); figure s3 for the second kind of coating (fiber D) and figure s4 for the third coating (fiber E). These images enabled to determine the $t_{coating}$, the time necessary to dissolve totally the different kind of coating. The first coating totally disappeared after 5 minutes in PBS. The second coating (fiber D) was totally dissolved only after 4 h in PBS whereas the third one (fiber E) dissolved after 5 h.

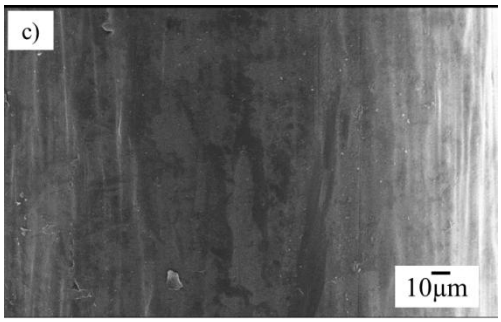


Figure s2: SEM images of first kind of coating made of ketoprofen observed on fibers A, B and C that were cooled at -78°C before venting c) after 5min of drug release in PBS.

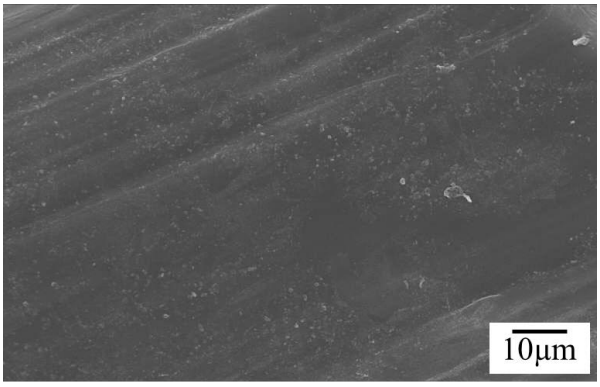
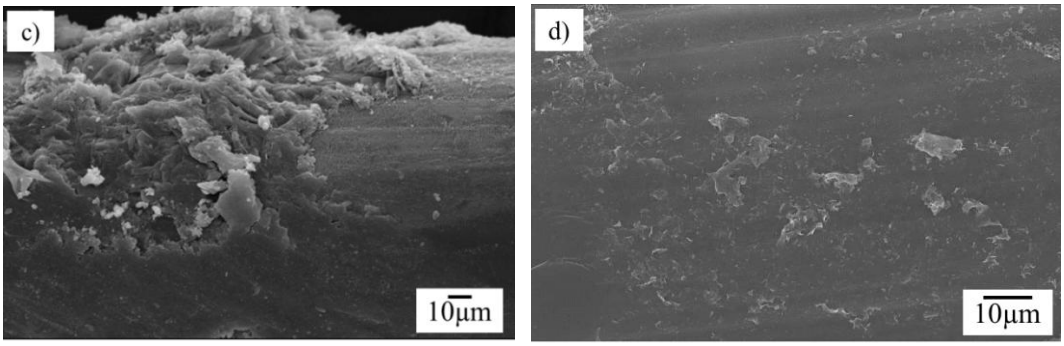


Figure s3: SEM images of the second kind of coating made of ketoprofen observed on fiber D that was depressurized at 80°C during 5sec after 4h in PBS;



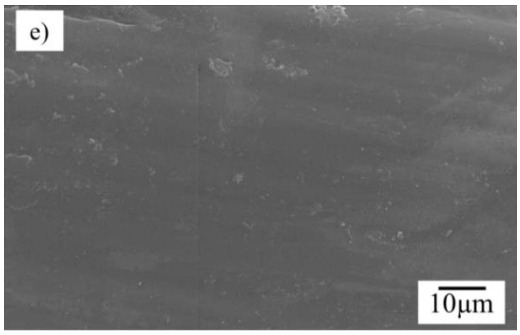
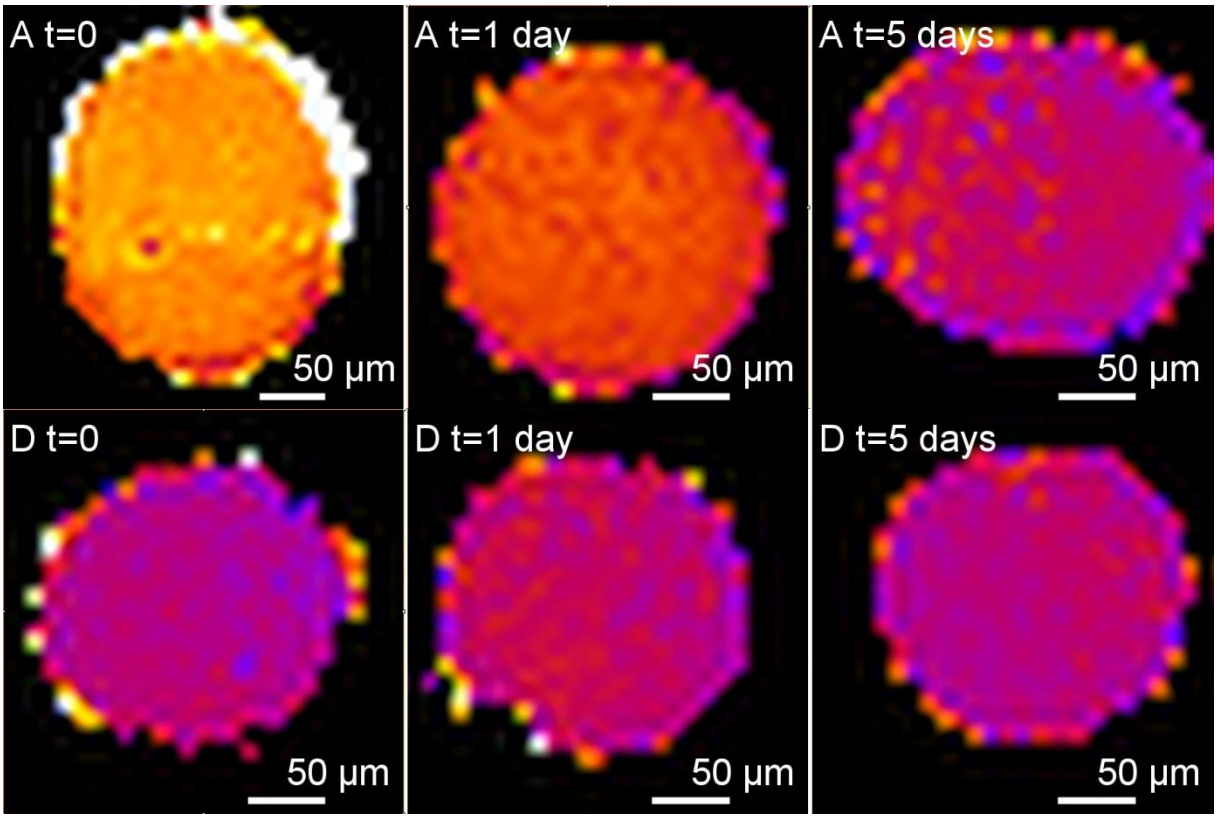


Figure s4: SEM images of the third kind of coating made of ketoprofen observed on fiber E that was depressurized at 80°C at 0.06MPa/min c) after 30min in PBS; d) after 2h in PBS ; e) after 5h in PBS

Supporting information c: Raman imaging

Figure s5 shows a mapping of the drug content of fibers A; D and E after the process, after 1 day of immersion into PBS and after 5 days. It proved that similar amount of ketoprofen remains in the fibers A and E after 5 days, which confirms the drug release profiles of figure 9.

The Raman mapping at t=0 was performed on fibers that coating was not removed.



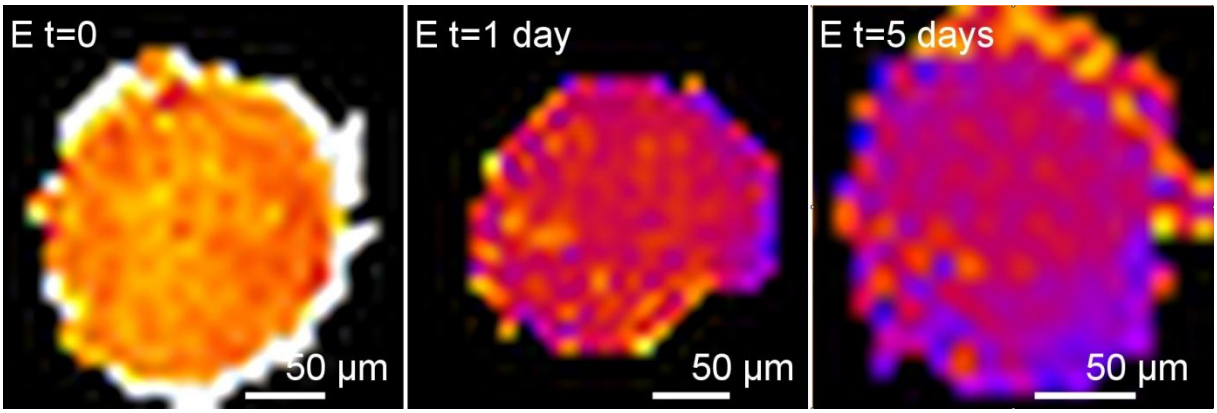


Figure s5: evolution of the drug-distribution after different time of drug release. Comparison of fibers A, D and E that have been depressurized under different conditions A) (-78°C; quick); D) (80°C; quick); E) (80°C; 0.06 MPa/min)