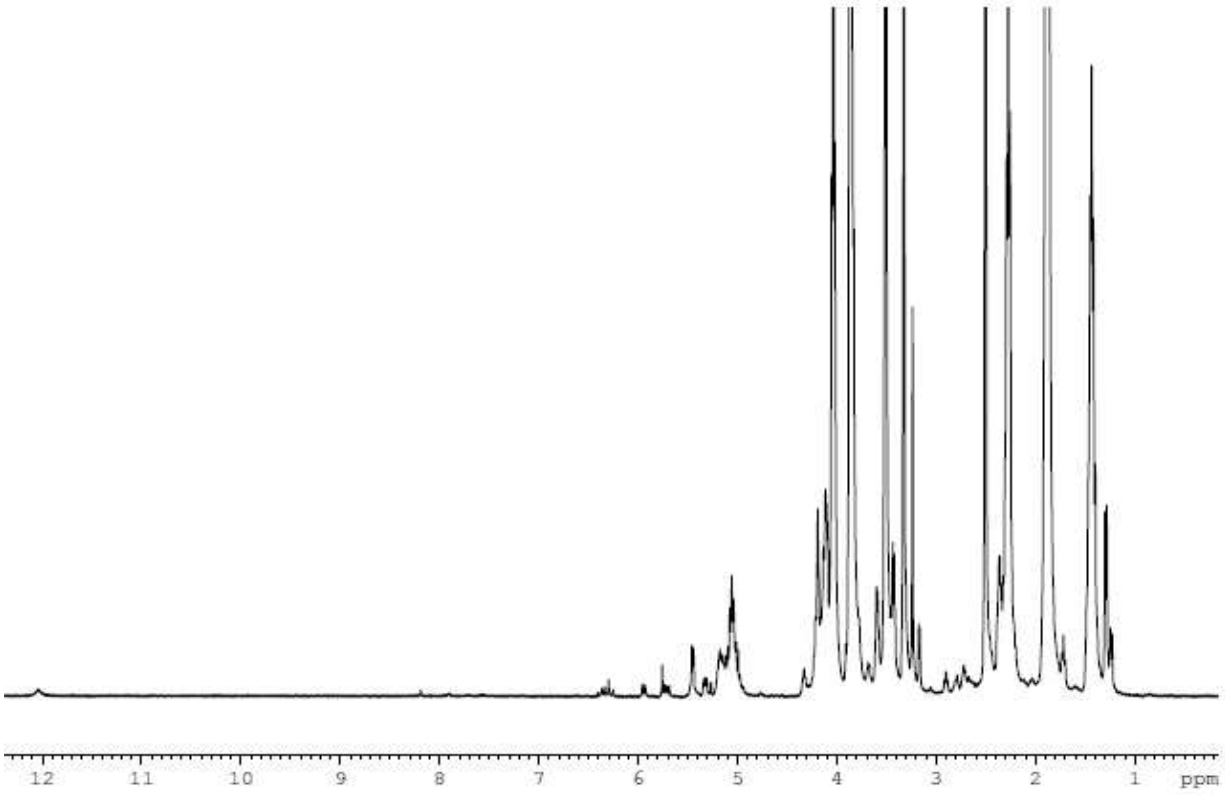
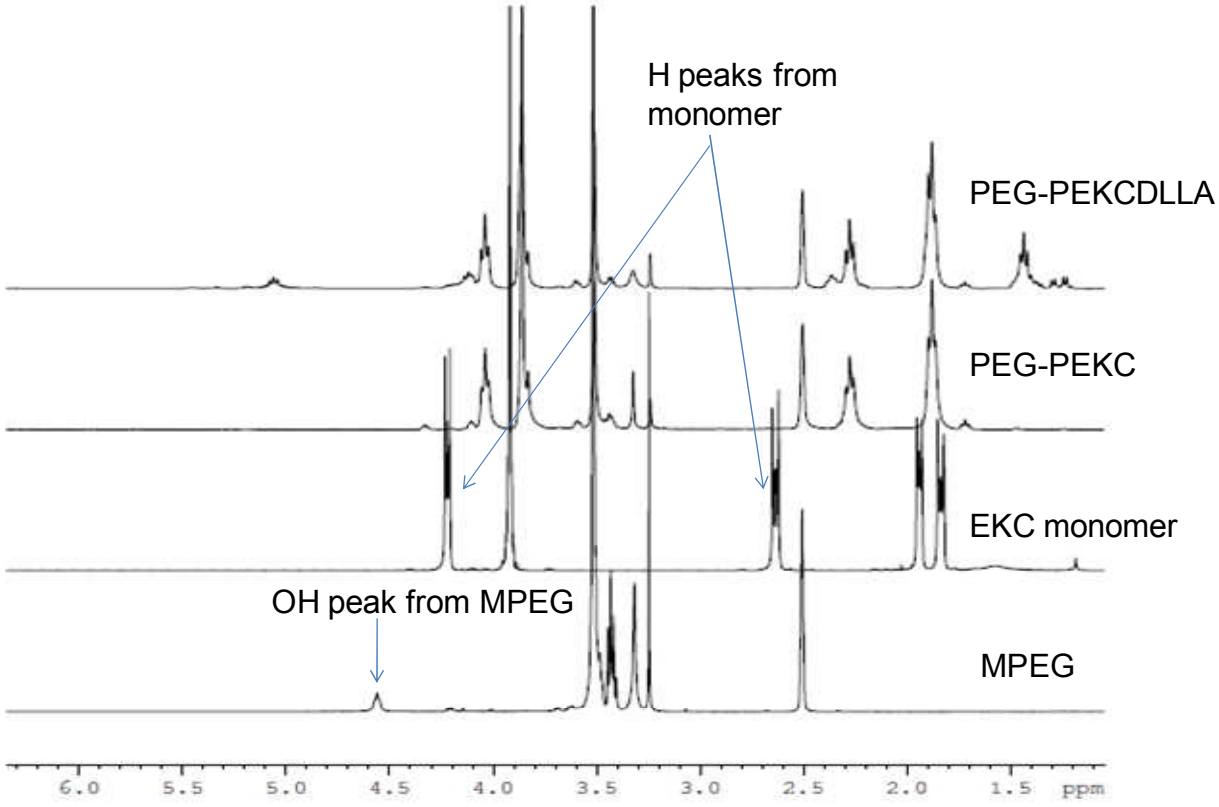
Supporting Information Available

Supplementary Figure 1: ^{1}H-NMR spectrum of the PEKC polymerized at 120ºC for 24 hours, showing evidence of degradation due to pyrolysis in the way of peaks in the alkene region at 5.7 ppm, 5.9 ppm, 6.3 ppm, which indicate the unsaturated end group formed, and at 12 ppm, corresponding to the carboxylic acid formed, as a result of pyrolysis.

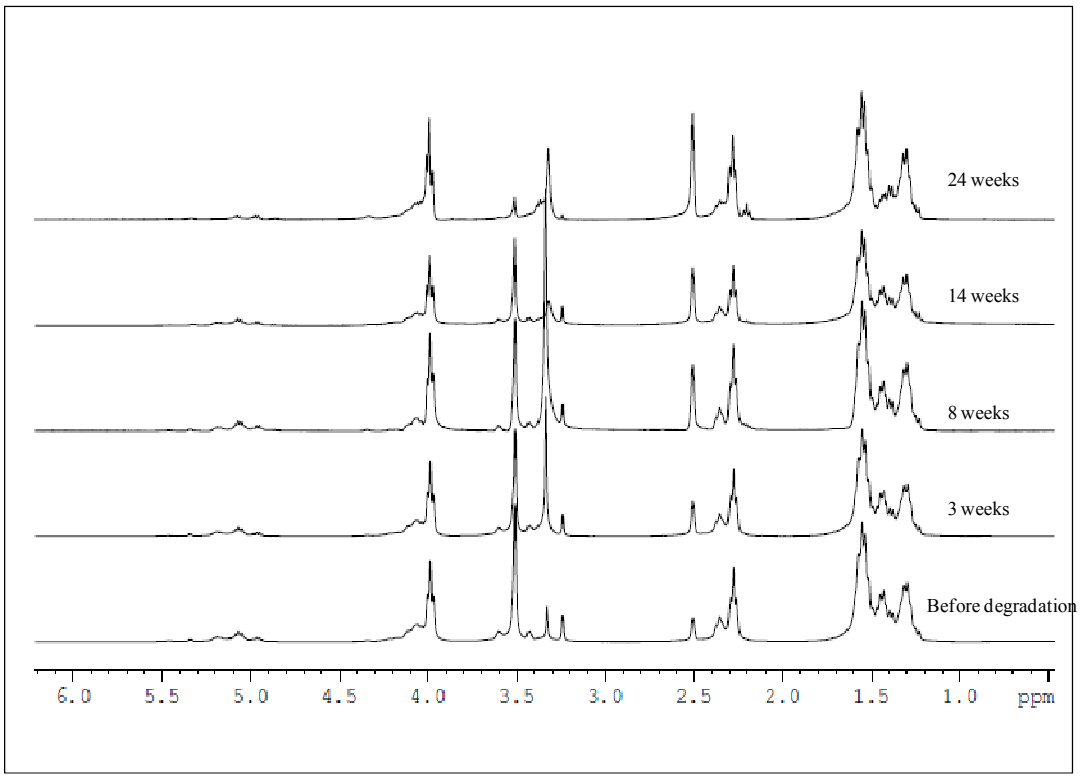


Supplementary Figure 2: Photograph of the polymers in buffer at 3 weeks showing the opaque colour of the layer of polymer directly in contact with the buffer and the yellow and clear colour of the layer of polymer not directly in contact with the buffer.

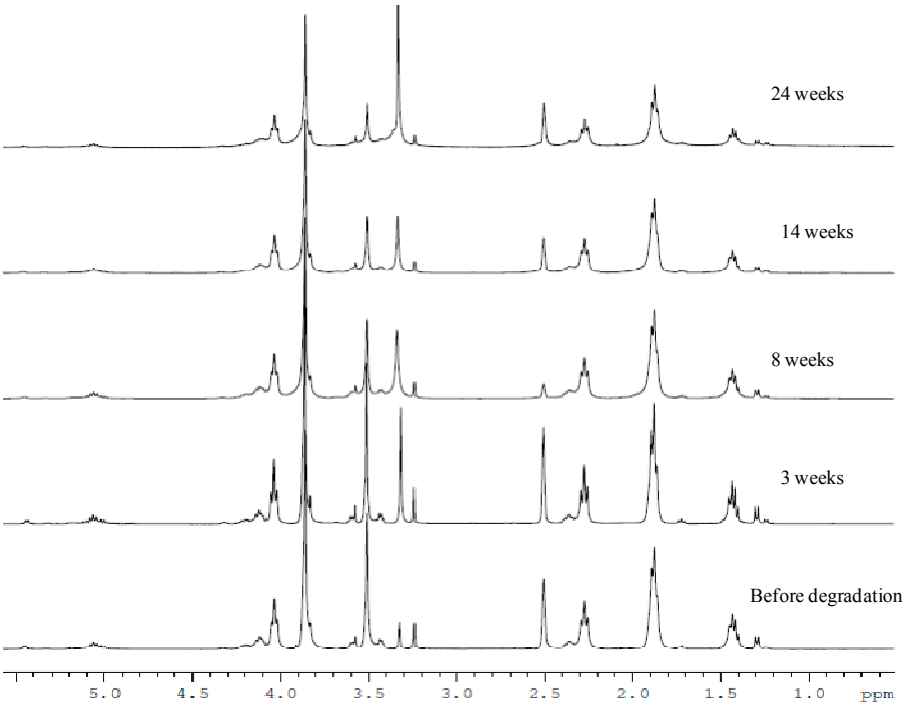
Supplementary Figure 3: ^{1}H-NMR spectrum of purified PEG-PEKCDLLA, PEG-PEKC and MPEG 350 in DMSO showing evidence of the absence of unreacted monomer and initiator.



Supplementary Figure 4: ^{1}H-NMR spectra of A) PEG-PCLDLLA B) PEG-PEKCDLLA during *in vitro* degradation for 24 weeks. The spectra show the gradual loss of the MPEG portion of the polymers by hydrolysis, indicated by the decrease in the methyl peak of the MPEG at 3.23 pm.



A


24 weeks
14 weeks
8 weeks
3 weeks
Before degradation
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
ppm

B

Supplemental Table 1: Wet and dry glass transition temperatures (ºC) of the EKC containing polymers during degradation.

Time (week)	OCT-PEKC		PEG-PEKC		OCT-PEKCDLLA		PEG-PEKCDLLA	
	wet	dry	wet	dry	wet	dry	wet	dry
3	-34	-30	-35	-32	-29	-24	-27	-21
8	-34	-29	-34	-30	-33	-24	-27	-21
14	-35	-30	-34	-30	-31	-26	-24	-19
24	-35	-31	-35	-30	-29	-26	-25	-20

Supplemental Table 2: Wet and dry glass transition temperatures (ºC) of the CL containing polymers during degradation.

Time (week)	OCT-PCLDLLA		PEG-PCLDLLA	
	wet	dry	wet	dry
3	-56	-53	-55	-53
8	-57	-55	-56	-55
14	-61	-55	-57	-54
24	-67	-65	-63	-58