

# Poly(lactic acid)/poly(vinylpyrrolidone) co-electrospun fibrous membrane as a tunable quercetin delivery platform for diabetic wounds

Francesca Di Cristo <sup>1,#</sup>, Anna Valentino <sup>2,#</sup>, Ilenia De Luca <sup>2</sup>, Gianfranco Peluso <sup>2,3</sup>, Irene Bonadies <sup>4,\*</sup>, Anna Di Salle <sup>2</sup>, and Anna Calarco <sup>2,\*</sup>

<sup>1</sup> Elleva Pharma s.r.l. via P. Castellino, 111 – 80131 Naples, Italy

<sup>2</sup> Research Institute on Terrestrial Ecosystems (IRET)—CNR, Via Pietro Castellino 111, 80131 Naples, Italy

<sup>3</sup> UniCamillus, International Medical University, 00131 Rome, Italy

<sup>4</sup> Institute of Polymers, Composites and Biomaterials (IPCB-CNR) Via Campi Flegrei, 34, 80078 Pozzuoli (NA), Italy

\* Correspondence: irene.bonadies@cnr.it (I.B.); anna.calarco@cnr.it (A.C.)

# These authors contributed equally to this work.

**Table S1.** Primers used for RT-qPCR.

<i>Gene</i>	<i>Accession Number</i>	<i>Forward (5'-3')</i>	<i>Reverse (5'-3')</i>
<i>TNF-<math>\alpha</math></i>	NM_000594.4	AACATCCAACCTTCCCAAACGC	TGGTCTCCAGATTCCAGATGTCAGG
<i>IL-1<math>\beta</math></i>	NM_000576.3	TCCAGCTACGAATCTCCGAC	GCATCTTCCTCAGCTTGTCC
<i>IL-6</i>	NM_000600.5	CGCCTTCGGTCCAGTTGCC	GCCAGTGCCTCTTTGCTGCTTT
<i>IL-10</i>	NM_000572.3	TGTTTTCCCTGACCTCCCTC	GCTCCCTGGTTTCTCTTCCT
<i>IL-12</i>	NM_002187.3	CAGAGGGGACAACAAGGAGT	CTTGAGCTTGTGAACGGCAT
<i>CCL18</i>	NM_002988.4	TCAAGATGACGCTGCAATGC	CTTAGCCCAAAACCCAGCAC
<i>CD206</i>	NM_002438.4	ACCAGTTCCTTGACCTCAGG	ATATCGGAAAGGACTGCGGT
<i>SOD</i>	NM_000454.4	CCAGTGCAGGGCATCATCAA	TCTTCATCCTTTGGCCACC
<i>CAT</i>	NM_001752.3	CGGACATGGTCTGGGACTTC	AACTGCCTCCCCATTTGCAT
<i>ACTB</i>	NM_001101.5	ACTCTTCCAGCCTTCCTTCC	CGTACAGGTCTTTGCGGATG

**Figure S1.** Elements analysis by scanning electron microscopy-energy dispersive X-ray spectrometry (SEM-EDX) of PP and PP/Q<sub>x</sub> samples (All results in weight %).

<b>Spectrum PP</b>	<b>C</b>	<b>O</b>
Mean	54.96	45.04
<i>Std. deviation</i>	<i>1.13</i>	<i>1.13</i>

<b>Spectrum PP/Q<sub>5</sub></b>	<b>C</b>	<b>O</b>
Mean	61.00	39.00
<i>Std. deviation</i>	<i>0.87</i>	<i>0.87</i>

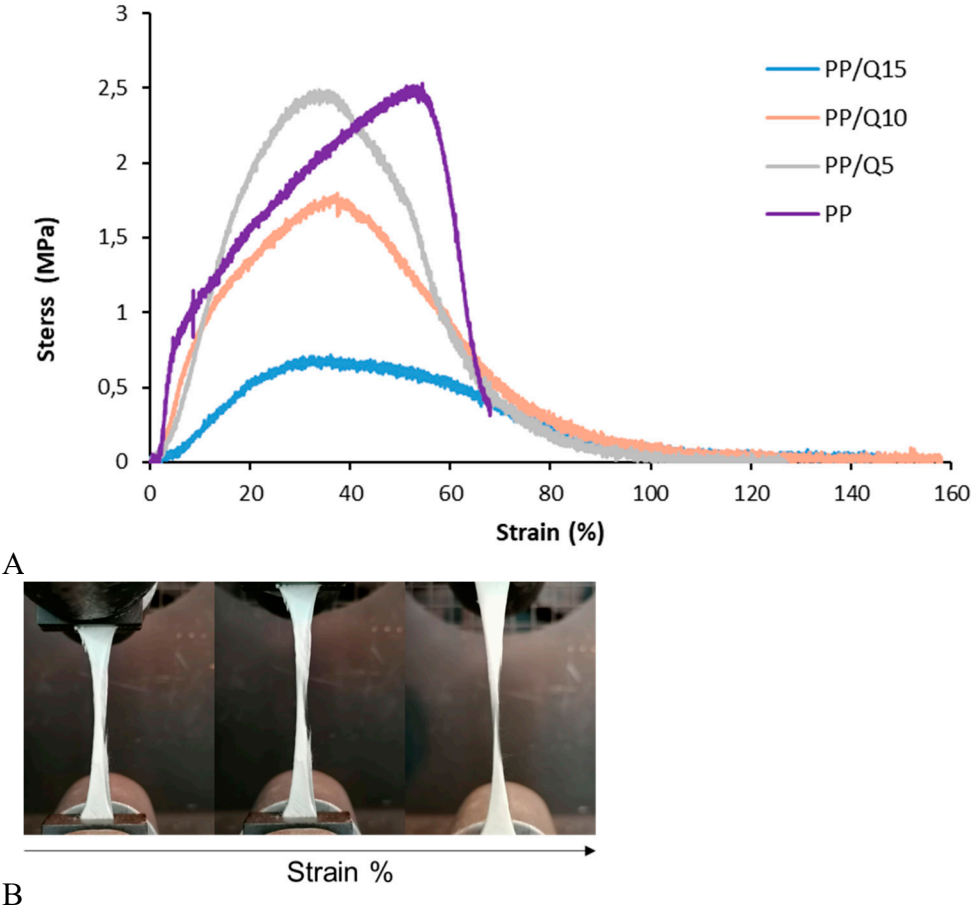
  

<b>Spectrum PP/Q<sub>10</sub></b>	<b>C</b>	<b>O</b>
Mean	73.63	26.37
<i>Std. deviation</i>	<i>0.47</i>	<i>0.47</i>

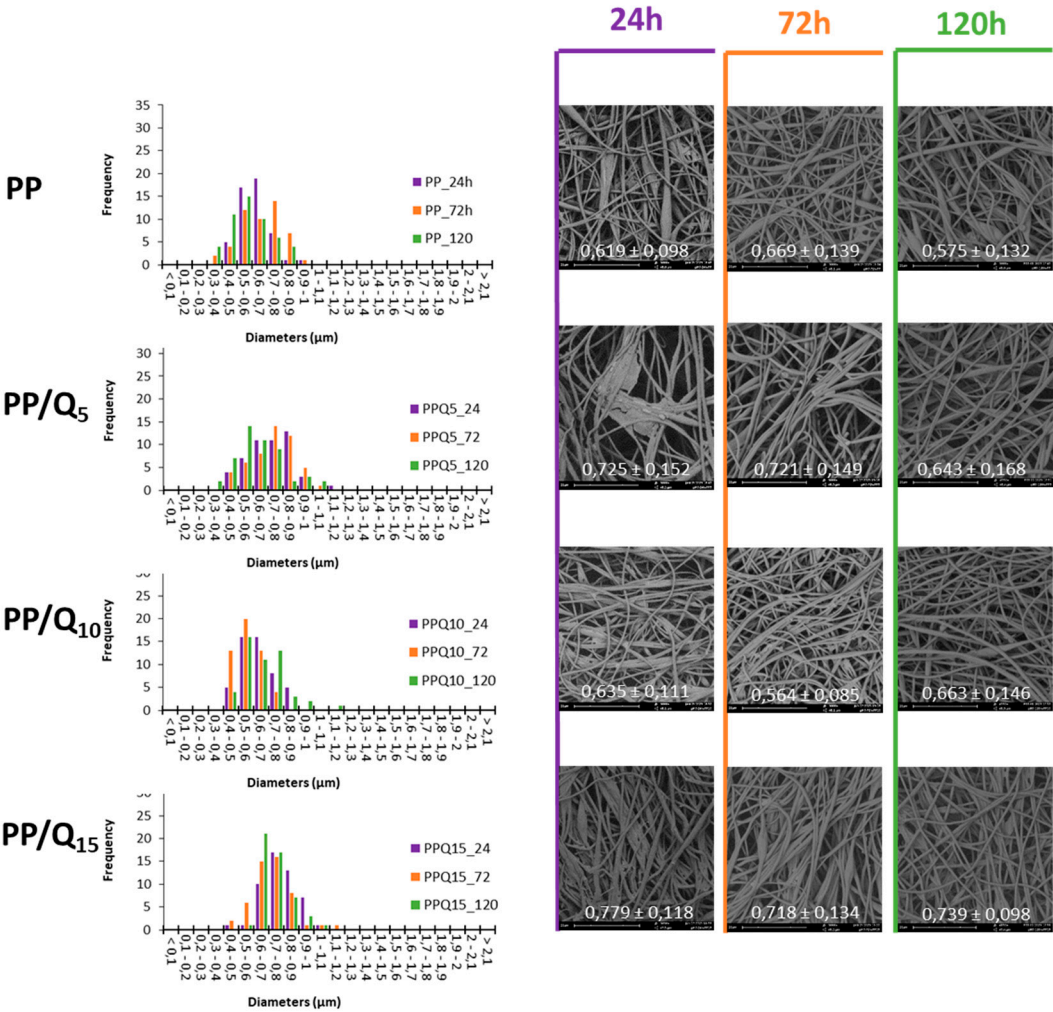
  

<b>Spectrum PP/Q<sub>15</sub></b>	<b>C</b>	<b>O</b>
Mean	68.24	31.76
<i>Std. deviation</i>	<i>1.19</i>	<i>1.19</i>

**Figure S2.** A. Stress-strain curves of PP/Qx electrospun mats. B. Image of a sample during tensile testing at different elongation percentages



**Figure S3.** Morphological analysis of mats after immersion test: diameter distribution (left) and SEM micrographs (right) at different time intervals



**Figure S4.** ATR spectra of mats before (PP, Quercetin, PLA) and after (PP/Q10) immersion test

