

Electrospun microfibers drived from biodegradable poly(ethylene oxide)/ Tocopherol

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In this work, micro-structured biodegradable poly(ethylene oxide) (PEO) fabrics are prepared by electrospinning. The processing parameters such as charged voltage and PEO concentration, affected the PEO fiber diameter. The morphology and diameter of PEO fibers are observed by using scanning electron microscope (SEM). As a result, at tip-to-collector distance (TCD) of 9 cm, the average diameter of PEO fibers is increased with increasing the charged voltage because of the aggregation between fibers, due to the remaining solvent on the fiber surfaces. Whereas, at TCD of 12 cm, the average fiber diameter is decreased as the charged voltage is increased because of complete evaporation of solvent. And the entrapments of tocopherol into PEO fibers containing tocopherol are confirmed by FT-IR. The tocopherol release behaviors of PEO fibers are characterized by UV/vis. spectra. It is found that tocopherol release rate from PEO fibers is increased with decreasing the diameter of PEO fibers, probably due to the increasing the specific surface area of PEO fibers.