

Abstract Submitted  
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**Physical or Chemical Aging of PLGA Electrospun Fibers Related to its Sequence Distribution** SHANSHAN XU, CHENHONG WANG, BIN XIAO, CHARLES HAN, None — Biodegradable aliphatic polyesters such as poly(lactic-co-glycolic acid) (PLGA) have been studied for decades and widely used in life sciences. However, the major problems encountered in time-controlled drug delivery, stress maintenance, aging and degradation of this kind of copolymer are lack of stability, which are relied on both molecular weight distribution and sequence distribution. Based on commonly used ring-opening polymerization, PLGA with different sequence distribution was synthesized by controlling the transesterification. Detailed investigations on electrospun PLGA fibers were carried out to identify the major factor of physical aging or chemical aging. With stretched polymer chains in electrospun fibers, the physical aging could be obtained by both entropy relaxation and contraction of the fibrous membrane. Even under low humidity and low temperature far away from the glass transition temperature, the physical aging of polymer with broad sequence distribution can be intense. These previously unidentified properties can still be improved in regulated clinical application if approached from a different angle.

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None

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