References on the Use of LACTEL® PCL


L00309 Yang W, Both SK, van Osch GJVM, Wang Y, Jansen JA, Yang F. Performance of different three-dimensional scaffolds for in vivo endochondral bone generation. European cells & materials 2014; 27:350-364. >>> Poly(e-caprolactone); tissue engineering (scaffold); rat (nude); wet electrospinning method; scaffolds implanted SC.

L00173 Whited BM, Rylander MN. The influence of electrospun scaffold topography on endothelial cell morphology, alignment, and adhesion in response to fluid flow. Biotechnology and bioengineering 2014; 111(1):184-195. >>> Poly(e-caprolactone); tissue engineering (scaffold, composite with type I collagen); electrospinning.


L00164 Bashur CA, Ramamurthi A. Composition of intraperitoneally implanted electrospun conduits modulates cellular elastic matrix generation. Acta Biomaterialia 2014; 10(1):163-172. >>> Poly(e-caprolactone); IV 1.0-1.3 dL/g; tissue engineering (scaffold); electrospinning.

L00308 Yang W, Yang F, Wang Y, Both SK, Jansen JA. In vivo bone generation via the endochondral pathway on three-dimensional electrospun fibers. Acta Biomaterialia 2013; 9(1):4505-4512. >>> Poly(e-caprolactone); IV 1.0-1.3 dL/g; tissue engineering (scaffold); rat (nude); wet electrospinning method; scaffolds implanted SC.

L00284 Knight T, Basu J, Rivera EA, Spencer T, Jain D, Payne R. Fabrication of a multi-layer three-dimensional scaffold with controlled porous micro-architecture for application in small intestine tissue engineering. Cell adhesion & migration 2013; 7(3):267-274. >>> Poly(e-caprolactone); Poly(DL-lactide-co-glycolide); MW < 160 kDa (PCL); 32.25 kDa (PLGA); tissue engineering (scaffold); combined compression molding with solvent casting/particulate leaching to develop multi-layered scaffold.

L00280 Filipovic N, Stevanovic M, Radulovic A, Pavlovic V, Uskokovic D. Facile synthesis of poly (ε-caprolactone) micro and nanospheres using different types of polyelectrolytes as stabilizers under ambient and elevated temperature. Composites Part B: Engineering 2013;
Poly(e-caprolactone); drug delivery (microspheres, nanospheres); PCL particles synthesize using solvent/non-solvent method.

L00290 Marszalek JE, Simon CG, Thodeti C, Adapala RK, Murthy A, Karim A. 2.5 D constructs for characterizing phase separated polymer blend surface morphology in tissue engineering scaffolds. Journal of Biomedical Materials Research Part A 2013; 101A(5):1502-1510. Poly(e-caprolactone); Poly(DL-lactide); MW: 80 kDa (PCL), 107.3 kDa (DLPLA); tissue engineering (film, scaffold); Films prepared by spin coating 50:50 blend of two polymers onto glass substrates or silicon wafers; scaffolds created by pouring polymer solution into Teflon molds filled with NaCl.

L00287 Yang W, Yang F, Wang Y, Both SK, Jansen JA. In vivo bone generation via the endochondral pathway on three-dimensional electrospun fibers. Acta Biomaterialia 2013; 9:4505-4512. Poly(e-caprolactone); IV 1.0-1.3 dL/g; Tissue engineering (orthopedic); novel wet-electrospinning system.

L00208 Zhao W, Ju YM, Christ G, Atala A, Yoo JJ, Lee SJ. Diaphragmatic muscle reconstruction with an aligned electrospun poly (+/-)-caprolactone/collagen hybrid scaffold. Biomaterials 2013; 34(33):8235-8240. Poly(e-caprolactone); IV 1.77 dL/g in HFP; tissue engineering (scaffold); electrospinning; scaffolds were fabricated by electrospinning a blend of PCL and collagen type I.

L00153 Gershovich JG, Dahlin RL, Kasper FK, Mikos AG. Enhanced Osteogenesis in Cocultures with Human Mesenchymal Stem Cells and Endothelial Cells on Polymeric Microfiber Scaffolds. Tissue Engineering Part A 2013; 19(23-24):2565-2576. Poly(e-caprolactone); IV 1.0-1.3 dL/g; tissue engineering (scaffold); electrospinning; nonwoven scaffold using 18 wt% PCL with average fiber diameter of 10 micrometer and average thickness of 1.05 +/- 0.05 mm.

L00165 Bashur CA, Eagleton MJ, Ramamurthi A. Impact of Electrospun Conduit Fiber Diameter and Enclosing Pouch Pore Size on Vascular Constructs Grown Within Rat Peritoneal Cavities. Tissue Engineering Part A 2013; 19(7-8):809-823. Poly(e-caprolactone); IV 1.0-1.3 dL/g; tissue engineering (scaffold); electrospinning; rat (Sprague Dawley, 200-250 g, male).


L00137 Dahlin RL, Gershovich JG, Kasper FK, Mikos AG. Flow Perfusion Co-culture of Human Mesenchymal Stem Cells and Endothelial Cells on Biodegradable Polymer Scaffolds. Annals of Biomedical Engineering 2013;1-10. Poly(e-caprolactone); IV 1.0-1.3 dL/g; tissue engineering (scaffold); electrospinning; sterilization by ETO.

L00194 Niu G, Criswell T, Sapoznik E, Lee SJ, Soker S. The influence of cross-linking methods on the mechanical and biocompatible properties of vascular scaffold. Journal of Science and Applications: Biomedicine 2013; 1(1):1-7. Poly(e-caprolactone); IV 1.7-1.9 dL/g in chloroform at 30C; tissue engineering (vascular scaffold); electrospinning; "GN (genipin) cross-linking is a promising method for cross-linking PCL/collagen scaffolds for vascular graft applications".

L00198 Bhamidipati M, Sridharan BP, Scurto AM, Detamore MS. Subcritical CO2 sintering of microspheres of different polymeric materials to fabricate scaffolds for tissue engineering. Materials Science and Engineering C 2013; 33:4892-4899. Poly(DL-lactide-co-glycolide); poly(e-caprolactone); 50:50; IV 1.3 dL/g - 42-44 kDa; IV 1.1-1.3 dL/g - 110- 125 kDa; tissue engineering (scaffold); < 3 months; < 24 months; "Uniform PLGA and PCL microspheres were lyophilized for 48 h and stored at 20 °C. A 10% polymer solution for PCL and a 20% polymer solution for PLGA were used to prepare the microspheres."
L00166 Yeatts AB, Both SK, Yang W, Alghamdi HS, Yang F, Fisher JP et al. In vivo bone regeneration using tubular perfusion system bioreactor cultured nanofibrous scaffolds. Tissue Engineering Part A 2013; 20(1-2):139-146. >>> Poly(e-caprolactone); IV 1.0-1.3 dL/g; tissue engineering (scaffold); electrospinning; "The electrospinning solution was prepared by dissolving PLGA/PCL (3:1 weight ratio) in trifluoroethanol/HFIP (9:1 volume ratio) at a concentration of 20% w/v".

L00171 Schindler C, Williams BL, Patel HN, Thomas V, Dean DR. Electrospun polycaprolactone/polyglyconate blends: Miscibility, mechanical behavior, and degradation. Polymer 2013; 54(25):6824-6833. >>> Poly(e-caprolactone); IV 1.15 dL/g; tissue engineering (scaffold); electrospinning.

L00214 Samavedi S, Guelcher SA, Goldstein AS, Whittington AR. Response of bone marrow stromal cells to graded co-electrospun scaffolds and its implications for engineering the ligament-bone interface. Biomaterials 2012; 33(2012):7727-7735. >>> Poly(e-caprolactone); IV 1.15 dL/g in TFE; tissue engineering (scaffold, nano-hydroxyapatite); electrospinning.

L00219 Zhang X, Xu Y, Thomas V, Bellis SL, Vohra YK. Engineering an antiplatelet adhesion layer on an electrospun scaffold using porcine endothelial progenitor cells. Journal of Biomedical Materials Research Part A 2012; 97A(2):145-151. >>> Poly(e-caprolactone); tissue engineering (scaffold); electrospinning; "this electrospun scaffold holds a great promise as a coronary artery substitute to promote the regeneration of functional arterial tissues in vivo." pg 150.

L00238 Lee BK, Ju YM, Cho JG, Jackson JD, Lee SJ, Atala A et al. End-to-side neurorrhaphy using an electrospun PCL/collagen nerve conduit for complex peripheral motor nerve regeneration. Biomaterials 2012; 33:9027-9036. >>> Poly(e-caprolactone); IV 1.77 dL/g; tissue engineering (nerve conduit); rat; electrospinning.

L00242 Lee J, Yoo JJ, Atala A, Lee SJ. The effect of controlled release of PDGF-BB from heparin-conjugated electrospun PCL/gelatin scaffolds on cellular bioactivity and infiltration. Biomaterials 2012; 33:6709-6720. >>> Poly(e-caprolactone); IV 1.77 dL/g; tissue engineering (scaffold), drug delivery (platelet-derived growth factor-BB); electrospinning.

L00241 Lee J, Yoo JJ, Atala A, Lee SJ. Controlled heparin conjugation on electrospun poly (e-caprolactone)/gelatin fibers for morphology-dependent protein delivery and enhanced cellular affinity. Acta Biomaterialia 2012; 8(7):2549-2558. >>> Poly(e-caprolactone); IV 1.77 dL/g; tissue engineering (scaffold), drug delivery (lysozyme); electrospinning.

L00180 Samavedi S, Olsen Horton C, Guelcher SA, Goldstein AS, Whittington AR. Fabrication of a model continuously graded co-electrospun mesh for regeneration of the ligamentt ligament interface. Acta Biomaterialia 2011; 7(12):4131-4138. >>> Poly(e-caprolactone); IV 1.15 dL/g - MW 2 kDa in 2,2,2-trifluoroethanol; tissue engineering (scaffold graded mesh; facial tissue); electrospinning.

L00227 Bottino MC, Thomas V, Janowski GM. A novel spatially designed and functionally graded electrospun membrane for periodontal regeneration. Acta Biomaterialia 2011; 7(1):216-224. >>> Poly(L-lactide); poly(e-caprolactone); 80:20; IV 0.55-0.75 dL/g; IV 0.80 dL/g in chloroform and HFIP; tissue engineering (scaffold); electrospinning.