

References on the Use of LACTEL® Polymers for Vascular Graft Applications

L00344 Bithare K, Shojaee M, Jones CG, Brenner JR, Bashur CA. Collagen incorporation within electrospun conduits reduces lipid oxidation and impacts conduit mechanics. *Biomedical Materials* 2016; 11(025019). >>> Poly(e-caprolactone); IV 1.0-1.3 dL/g in chloroform; Tissue engineering (vascular scaffold); rat; electrospinning.

L00314 Ahn H, Ju YM, Takahashi H, Williams DF, Yoo, J.J. et al. Engineered small diameter vascular grafts by combining cell sheet engineering and electrospinning technology. *Acta Biomaterialia* 2015; 16:14-22. >>> Poly(e-caprolactone); IV 1.77 dL/g; Tissue engineering (vascular graft); electrospinning.

L00339 Ferdous J, Kolachalama VB, Kolandaivelu K, Shazly T. Degree of bioresorbable vascular scaffold expansion modulates loss of essential function. *Acta Biomaterialia* 2015; 26:195-204. >>> Poly(DL-lactide-co-glycolide) ester terminated; 50:50; IV 0.82 dL/g; Tissue engineering (scaffold, vascular graft); pg. 198; treatment of obstructive artery disease; degradation, mechanical, and in vitro drug release testing.

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.

L00333 Niu G, Sapoznik E, Lu P, Criswell T, Mohs A, Wang G et al. Fluorescent imaging of endothelial cells in bioengineered blood vessels: the impact of crosslinking of the scaffold. *Journal of tissue engineering and regenerative medicine* 2014. >>> Poly (e-caprolactone); IV 1.7.1.9 dl/g at 30C in chloroform; Tissue engineering (scaffold, vascular graft); electrospinning; see "characterization of scaffolds" (pg. 3) for details on scaffold structure qualities (i.e. microstructure, crosslinking, wettability, etc.).

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.

L00189 Janairo RR, Zhu Y, Chen T, Li S. Mucin Covalently Bonded to Microfibers Improves the Patency of Vascular Grafts. *Tissue Engineering Part A* 2013; 20(1-2):285-293. >>> Poly(L-lactide); IV 1.09 dL/g; tissue engineering (scaffold); rat; electrospinning.

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".

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, vascular graft); rat (Sprague Dawley, 200-250 g, male); 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, vascular graft); 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.

L00094 Hashi CK, Derugin N, Janairo RRR, Lee R, Schultz D, Lotz J et al. Antithrombogenic Modification of Small-Diameter Microfibrous Vascular Grafts. *Arteriosclerosis, thrombosis, and vascular biology* 2010; 30(8):1621-1627. >>> Poly(L-lactide); IV 1.09 dL/g; tissue engineering (vascular graft); rat (female, SD, 200-240 grams); grafts were made by electrospinning polymer fibers onto a rotating mandrel; actual images of grafts in vivo, p. 1624; "The microfibrous grafts were integrated well into native vasculature, supported by the evidence of angiogenesis and SMC recruitment in the outer layer of the graft." p. 1626; "The slow degradation rate of biopolymers, such as PLLA, maintains the mechanical strength of the grafts long enough and allows gradual replacement of synthetic scaffolds by native matrix with time." p. 1627.

L00037 Mirensky TL, Nelson GN, Brennan MP, Roh JD, Hibino N, Yi T et al. Tissue-engineered arterial grafts: long-term results after implantation in a small animal model. *Journal of Pediatric Surgery* 2009; 44(6):1127-1133. >>> Poly(L-lactide-co-e-caprolactone); 50:50; MW 263.8 kDa; tissue engineering (scaffold, vascular graft); mice (SCID, female, 3-5 wks old); scaffold was used as an arterial conduit graft; image of graft on p. 1129; "polymer was still present at 1 year postimplantation." p. 1130.

L00018 Tillman BW, Yazdani SK, Lee SJ, Geary RL, Atala A, Yoo JJ. The in vivo stability of electrospun polycaprolactone-collagen scaffolds in vascular reconstruction. *Biomaterials* 2009; 30(4):583-588. >>> Poly(ϵ -caprolactone); IV 1.77 dL/g; tissue engineering (scaffold); rabbit (aortoiliac bypass model, new zealand); >1 month; electrospinning; "results indicate that electrospun scaffolds support adherence and growth of vascular cells under physiologic conditions and that endothelialized grafts resisted adherence of platelets when exposed to blood;" collagen/PCL composite material used; implanted grafts were 4 cm in length; color image of scaffold on p. 586.

L00082 Roh JD, Nelson GN, Brennan MP, Mirensky TL, Yi T, Hazlett TF et al. Small-diameter biodegradable scaffolds for functional vascular tissue engineering in the mouse model. *Biomaterials* 2008; 29:1454-1463. >>> Poly(ϵ -caprolactone); poly(DL-lactide); 50:50; MW 263.8 kDa; tissue engineering (scaffold); mice; "The scaffolds implanted as either inferior vena cava or aortic interposition grafts in SCID/bg mice demonstrated excellent patency without evidence of thromboembolic complications or aneurysm formation" p 1454; P(CL/LA) was used as a sealant for the tubular constructs.

L00038 Nelson GN, Roh JD, Mirensky TL, Wang Y, Yi T, Tellides G et al. Initial evaluation of the use of USPIO cell labeling and noninvasive MR monitoring of human tissue-engineered vascular grafts in vivo. *The FASEB Journal* 2008; 22(11):3888. >>> Poly(L-lactide-co-e-caprolactone); MW 263.8 kDa; tissue engineering (scaffold);