LACTEL Absorbable Polymers

References on the Use of LACTEL® Absorbable Polymers in Tissue Engineering Applications

L00285 Chia HN, Wu BM. High-resolution direct 3D printed PLGA scaffolds: print and shrink. Biofabrication 2015; 7(1):1-11. >>> Poly(DL-lactide-co-glycolide); 85:15; IV 0.63 dL/g; Tissue engineering (scaffold); microparticles formed by emulsion solvent evaporation; 3D printing.

L00270 Behrens AM, Casey BJ, Sikorski MJ, Wu KL, Tutak W, Sandler AD et al. In Situ Deposition of PLGA Nanofibers via Solution Blow Spinning. ACS Macro Letters 2014; 3:249-254. >>> Poly(DL-lactide-co-glycolide); 50:50; IV 0.64; 0.93 dL/g in HFIP; tissue engineering (mat); pig; Mats applied to various in vivo defects (intestinal anastomoses, liver injury, lung segmentectomy and diaphragm defect).

L00274 Costello CM, Hongpeng J, Shaffiey S, Yu J, Jain NK, Hackam D et al. Synthetic Small Intestinal Scaffolds for Improved Studies of Intestinal Differentiation. Biotechnol Bioeng 2014; 111(6):1222-1232. >>> Poly(DL-lactide-co-glycolide); tissue engineering (scaffold); PLGA scaffolds were fabricated using a modified version of a porogen leaching/thermally induced phase separation technique.

L00271 Castro NJ, O'Brien CM, Zhang LG. Biomimetic biphasic 3–D nanocomposite scaffold for osteochondral regeneration. AIChE Journal 2014; 60(2):432-442. >>> Poly(DL-lactide-co-glycolide)-COOH; tissue engineering (scaffold); drug delivery (nanospheres, BMP-2 and TGF- β1); electrospraying.

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.

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.

L00264 Admane P, Anish C, Panda AK. Fusion and self assembly of biodegradable polymer particles into scaffold and membrane like structures at room temperature for regenerative medicine. Molecular Pharmaceutics 2014; 11:2190-2202. >>> Poly(DL-lactide); Poly(DL-lactide-co-glycolide); Poly(L-lactide); IV 0.55-0.75 dL/g in chloroform (DLPLA), 0.26-0.54 (PLGA); 50 kDa (PLA); tissue engineering (scaffold, membrane); drug delivery; rat; particles prepared using double emulsion solvent evaporation method; scaffold was evaluated in vivo as skin substitute.

L00283 Jeon JE, Vaquette C+, Theodoropoulos C, Klein TJ, Hutmacher DW. Multiphasic construct studied in an ectopic osteochondral defect model. Journal of The Royal Society Interface 2014; 11(95):20140184. >>> Poly(e-caprolactone); tissue engineering; rat (SC); electrospinning.

L00282 Jamuna-Thevi K, Saarani NN, bdul Kadir MR, Hermawan H. Triple-layered PLGA/nanoapatite/lauric acid graded composite membrane for periodontal guided bone regeneration. Materials Science and Engineering: C 2014; 43:253-263. >>> Poly(DL-lactide-co-glycolide); 85:15; IV 0.55-0.75 dL/g in chloroform; tissue engineering (composite membrane with nanoapatite, lauric acid);

L00277 Eftekhari S, El Sawi I, Bagheri ZS, Turcotte G, Bougherara H. Fabrication and characterization of novel biomimetic PLLA/cellulose/hydroxyapatite nanocomposite for bone repair applications. Materials Science and Engineering: C 2014; 39:120-125. >>> Poly(L-lactide); MW ≥ 85 kDa; tissue engineering (orthopedic nanocomposite, hydroxyapatite, microcrystalline cellulose);

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 (scaffold); electrospinning; "GN (genipin) cross-linking is a promising method for cross-linking PCL/collagen scaffolds for vascular graft applications".

L00172 Thayer PS, Dimling AF, Plessl DS, Hahn MR, Guelcher SA, Dahlgren LA et al. Cellularized Cylindrical Fiber/Hydrogel Composites for Ligament Tissue Engineering. Biomacromolecules 2013; 15(1):75-83. >>> Poly(DL-lactide-co-glycolide); 85:15; IV 0.55-0.75 dL/g; tissue engineering (scaffold); electrospinning.

L00170 Cheng Q, Lee BLP, Komvopoulos K, Li S. Engineering the Microstructure of Electrospun Fibrous Scaffolds by Microtopography. Biomacromolecules 2013; 14(5):1349-1360. >>> Poly(L-lactide); IV 1.09 dL/g; tissue engineering (scaffold); electrospinning; "PLLA pellets were first dissolved in HFIP (19% w/v) in an ultrasonic water bath. The polymer solution was then delivered through a stainless steel 23G dispensing needle by a syringe pump." pg 1350.

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); 24 months *in vitro*; electrospinning.

L00179 Saito E, Suarez-Gonzalez D, Rao RR, Stegemann JP, Murphy WL, Hollister SJ. Use of Micro-Computed Tomography to Nondestructively Characterize Biomineral Coatings on Solid Freeform Fabricated Poly (L-Lactic Acid) and Poly (e-Caprolactone) Scaffolds In Vitro and In Vivo. Tissue Engineering: Part C 2013; 19(7):507-517. >>> Poly(L-lactide); IV 0.65 dL/g; tissue engineering (scaffold); "Cylindrical porous PLLA... scaffolds 5mm diameter and 3mm height were fabricated using an indirect SFF" pg 508.

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.

L00192 Cheng Q, Blais MO, Jabbarzadeh E. PLGA-Carbon Nanotube Conjugates for Intercellular Delivery of Caspase-3 into Osteosarcoma Cells. PloS one 2013; 8(12):1-10. >>> Poly(DL-lactide-co-glycolide); 75:25; drug delivery (carbon nanotube, BSA, flourescent BSA, caspase-3); tissue engineering (scaffold, bone);

L00174 Soscia DA, Sequeira SJ, Schramma RA, Jayarathanam K, Cantara SI, Larsen M et al. Salivary gland cell differentiation and organization on micropatterned PLGA nanofiber craters. Biomaterials 2013; 34:6773-6784. >>> Poly(DL-lactide-co-glycolide); 85:15; MW 95 kDa; tissue engineering (scaffold); electrospinning.

L00132 Cheng Q, Komvopoulos K, Li S. Plasma–assisted heparin conjugation on electrospun poly (L-lactide) fibrous scaffolds. Journal of Biomedical Materials Research Part A 2013;1-7. >>> Poly(L-lactide); IV 1.09 dL/g; tissue engineering (scaffold); electrospinning.

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.

L00135 Costa PF, Vaquette C+, Zhang Q, Reis RL, Ivanovski S, Hutmacher DW. Advanced Tissue Engineering Scaffold Design for Regeneration of the Complex Hierarchical Periodontal Structure. Journal of clinical periodontology 2013; 41:283-294. >>> Poly(e-caprolactone); tissue engineering (scaffold); rat; electrospinning; scaffolds implanted SC in rats.

L00134 Cheng Q, Lee BL-P, Komvopoulos K, Yan Z, Li S. Plasma surface chemical treatment of electrospun poly (L-lactide) microfibrous scaffolds for enhanced cell adhesion, growth, and infiltration. Tissue Engineering

Part A 2013; 19(9-10):1188-1198. >>> Poly(l-lactide); IV 1.09 dL/g; tissue engineering (scaffold); electrospinning.

L00141 DeConde AS, Sidell D, Lee M, Bezouglaia O, Low K, Elashoff D et al. Bone morphogenetic protein–2–impregnated biomimetic scaffolds successfully induce bone healing in a marginal mandibular defect. The Laryngoscope 2013; 123:1149-1155. >>> Poly(DL-lactide-*co*-glycolide); 85:15; IV 0.61 dL/g; tissue engineering (scaffold); rat; disinfected by ETOH immersion; "PLGA is a common synthetic polymer with an established safety record in humans and not considered osteoinductive" (p. 1152).

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

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".

L00149 Fonseca C, Caminal M, Peris D, Barrachina J, F+ábregas PJ, Garcia F et al. An arthroscopic approach for the treatment of osteochondral focal defects with cell-free and cell-loaded PLGA scaffolds in sheep. Cytotechnology 2013;1-10. >>> Poly(DL-lactide-co-glycolide); IV 0.55-0.75 dL/g; tissue engineering (scaffold, orthopedic); sheep; scaffolds prepared using solution-casting/salt leaching technique; "PLGA was chosen because it is one of the few synthetic materials approved by the FDA as scaffolding material for clinical applications and it has been previously used in articular cartilage treatment, emerging as a valuable chondrocyte and MSC delivery vehicle." (p. 9).

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.

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.".

L00249 Lyu S, Huang C, Yang H, Zhang X. Electrospun Fibers as a Scaffolding Platform for Bone Tissue Repair. Journal of Orthopaedic Research 2013; 31(9):1382-1389. >>> Poly(DL-lactide-co-glycolide); 75:25; tissue engineering (scaffold); electrospinning.

L00255 Park AH, Hoyt D, Britt D, Chase S, Tansavatdi K, Hunter L et al. Cross–linked hydrogel and polyester resorbable ventilation tubes in a chinchilla model. The Laryngoscope 2013; 123(4):1043-1048. >>> Poly(DL-lactide-co-glycolide); Poly(L-lactide); 50:50 (PLGA); tissue engineering (tubes); chinchilla;

L00234 Knight TA, Payne RG. Characterization of a PGA-Based Scaffold for Use in a Tissue-Engineered Neo-Urinary Conduit. Organ Regeneration 2013; 1001:179-188. >>> Poly(DL-lactide-co-glycolide); 50:50; IV 0.55-0.75 dL/g; tissue engineering (scaffold); methods described for tensile testing and biological characterization (cell viability and proliferation).

L00240 Lee BL-P, Tang Z, Wang A, Huang F, Yan Z, Wang D et al. Synovial Stem Cells and Their Responses to the Porosity of Microfibrous Scaffold. Acta Biomaterialia 2013; 9:7264-7275. >>> Poly(L-lactide); IV 1.09 dL/g - MW 131 kDa; tissue engineering (scaffold); rat; electrospinning.

L00286 Kobsa S, Kristofik NJ, Sawyer AJ, Bothwell ALM, Kyriakides TR, Saltzman WM. An electrospun scaffold integrating nucleic acid delivery for treatment of fullthickness wounds. Biomaterials 2013; 34:3891-3901. >>> Poly(L-lactide); Tissue engineering (scaffold); drug delivery (DNA plasmid coding for keratinocyte growth factor); mice; electrospinning; wound healing.

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.

L00256 Payne RG, Knight TA. Design, Fabrication, and Preparation of Synthetic Scaffolds for Urologic Tissue Engineering. Organ Regeneration 2013;167-177. >>> Poly(DL-lactide-co-glycolide); 50:50; IV 0.55-0.75 dL/g; tissue engineering (scaffold);

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.

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.

L00200 Beltzer C, Hagele J, Kratz M, Fuhrmann R, Wilke A, Franke RP et al. Monitoring Degradation Process of PLGA/Cap Scaffolds Seeded With Mesenchymal Stem Cells in a Critical-Sized Defect in the Rabbit Femur using Raman Spectroscopy. Journal of Bone Marrow Research 2013; 1(4):1-6. >>> Poly(DL-lactide-co-glycolide); 75:25; tissue engineering (scaffold); rabbit (female, chinchilla-bastard, 6 mo old); 4 weeks; "The strain Chinchilla-Bastard was used because other rabbit strains common for *in vivo* testing like New Zealand White are known to be more stress-susceptible and therefore have a higher narcosis risk..."; PLGA/calcium phosphate scaffolds.

L00145 da Costa KJR, Passos JJ, Gomes AD, Sinisterra RnD, Lanza ClR, Cort+¬s ME. Effect of testosterone incorporation on cell proliferation and differentiation for polymer-bioceramic composites. Journal of Materials Science: Materials in Medicine 2012; 23(11):2751-2759. >>> Poly(DL-lactide- *co*-glycolide), PCL; 50:50; IV 0.39 dL/g at 30C in HFIP - MW 60 kDa (PLGA), IV 1.01 dL/g at 30C in chloroform - MW 10 kDa (PCL); tissue engineering (scaffold); orthopedic; sterilization by ETO.

L00177 Truong YB, Glattauer V, Briggs KL, Zappe S, Ramshaw JA. Collagen-based layer-by-layer coating on electrospun polymer scaffolds. Biomaterials 2012; 33:9198-9204. >>> Poly(DL-lactide-co-glycolide) acid terminated; 50:50; IV 0.55-0.75 dL/g; tissue engineering (scaffold); electrospinning; "Synthetic polymer microfibers were prepared by electrospinning... fibres were spun from a 40% (w/v) solution in N,N-dimethylacetamide (Aldrich) using a 23G needle at 150 mm distance from tip to collector and a 20 kV potential. After electrospinning, samples were placed in an oven (50 C, >16 h) to complete removal of solvent and then stored over desiccant until used." pg 9199.

L00152 Gala-Garcia A, Carneiro MBH, Silva GAB, Ferreira LS, Vieira LQ, Marques MM et al. In vitro and in vivo evaluation of the biocompatibility of a calcium phosphate/poly (lactic-co-glycolic acid) composite. Journal of Materials Science: Materials in Medicine 2012; 23(7):1785-1796. >>> Poly(DL-lactide-co-glycolide); 50:50; MW 60 kDa; tissue engineering (composite, bioceramic of beta-tricalcium phosphate); rat; composite prepared by dual-phase mixing method.

L00215 Sequeira SJ, Soscia DA, Oztan B, Mosier AP, Jean-Gilles R, Gadre A et al. The regulation of focal adhesion complex formation and salivary gland epithelial cell organization by nanofibrous PLGA scaffolds. Biomaterials 2012; 33(11):3175-3186. >>> Poly(DL-lactide-co-glycolide); 85:15; MW 95 kDa in HFIP; tissue engineering (scaffold, artificial salivary gland); 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.

L00187 Rosevear HM, Krishnamachari Y, Ariza CA, Mallapragada SK, Salem AK, Griffith TS et al. Effect of Combined Locally Delivered Growth Factors and Systemic Sildenafil Citrate on Microrecanalization in Biodegradable Conduit for Vas Deferens Reconstruction. Urology 2012; 79(4):967-9e1. >>> Poly(DL-lactide); tissue engineering (biodegradable conduit); rat (male Sprague-Dawley); PDLA in chloroform; biodegradable conduit for vas deferens reconstruction.

L00139 D'Angelo F, Armentano I, Cacciotti I, Tiribuzi R, Quattrocelli M, Del Gaudio C et al. Tuning Multi/Pluri-Potent Stem Cell Fate by Electrospun Poly (L-lactic acid)-Calcium-Deficient Hydroxyapatite Nanocomposite Mats. Biomacromolecules 2012; 13(5):1350-1360. >>> Poly(L-lactide); IV 0.90-1.2 dL/g; tissue engineering (fibrous mat); electrospinning.

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.

L00239 Lee BL-P, Jeon H, Wang A, Yan Z, Yu J, Grigoropoulos C et al. Femtosecond laser ablation enhances cell infiltration into three-dimensional electrospun scaffolds. Acta Biomaterialia 2012; 8(7):2648-2658. >>> Poly(L-lactide); IV 1.09 dL/g; tissue engineering (scaffold); rat; electrospinning; membranes disinfected in 70% ethanol under UV light for 30 min followed by five washes in sterile deionized water.

L00220 Cantara SI, Soscia DA, Sequeira SJ, Jean-Gilles RP, Castracane J, Larsen M. Selective functionalization of nanofiber scaffolds to regulate salivary gland epithelial cell proliferation and polarity. Biomaterials 2012; 2012(33):8372-8382. >>> Poly(DL-lactide-co-glycolide); 85:15; MW 95 kDa in HFIP; tissue engineering (nanofiber scaffold); electrospinning; "Both acinar and ductal cell lines responded to signals provided by bifunctional scaffolds coupled to chitosan and laminin-111, demonstrating the applicability of such scaffolds for epithelial cell types." pg 8372.

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.

L00217 Saito E, Liu Y, Migneco F, Hollister SJ. Strut size and surface area effects on long-term in vivo degradation in computer designed poly(L-lactic acid) three-dimensional porous scaffolds. Acta Biomaterialia 2012; 2012(8):2568-2577. >>> Poly(L-lactide); tissue engineering (scaffold); strong correlations between surface area and percentage mass loss were found at 12 (R2 = 0.681) and 21 (R2 = 0.671) weeks.

L00159 Hou Y, Hu J, Park H, Lee M. Chitosan–based nanoparticles as a sustained protein release carrier for tissue engineering applications. Journal of Biomedical Materials Research Part A 2012; 100(4):939-947. >>> Poly(DL-lactide-co-glycolide) acid terminated; 85:15; 50:50; IV 0.61, 0.67 dL/g; tissue engineering (scaffold); scaffolds created using a solvent casting and particulate leaching technique; scaffolds were coated with protein loaded chitosan nanoparticles.

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.

L00162 James AW, Zara JN, Corselli M, Askarinam A, Zhou AM, Hourfar A et al. An abundant perivascular source of stem cells for bone tissue engineering. Stem cells translational medicine 2012; 1(9):673-684. >>> Poly(DL-lactide-co-glycolide); 85:15; IV 0.61 dL/g; tissue engineering (scaffold, orthopedic); mice; scaffolds prepared by solvent casting and particulate leaching method; disinfected by soaking in ethanol; scaffolds placed in parietal bone defects.

L00116 Vaquette C, Fan W, Xiao Y, Hamlet S, Hutmacher DW, Ivanovski S. A biphasic scaffold design combined with cell sheet technology for simultaneous regeneration of alveolar bone/periodontal ligament complex. Biomaterials 2012; 33:5560-5573. >>> Poly(ε-caprolactone); tissue engineering (biphasic scaffold, beta-tricalcium phosphate); rat (nude); in vitro; periodontitis; electrospinning.

L00226 Bianco A, Bozzo BM, Del Gaudio C, Cacciotti I, Armentano I, Dottori M et al. Poly (L-lactic acid)/calcium-deficient nanohydroxyapatite electrospun mats for bone marrow stem cell cultures. Journal of Bioactive and Compatible Polymers 2011; 26(3):225-241. >>> Poly(L-lactide); IV 0.90-1.2 dL/g in chloroform; tissue engineering (scaffold, hydroxyapatite); electrospinning; "electrospun PLLA and PLLA/d-HAp mats can be regarded as potential scaffolds for bone marrow mesenchymal stem cells culture." pg 225.

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.

L00091 Armentano I, Marinucci L, Dottori M, Balloni S, Fortunati E, Pennacchi M et al. Novel Poly (L-lactide) PLLA/SWNTs Nanocomposites for Biomedical Applications: Material Characterization and Biocompatibility Evaluation. Journal of Biomaterials Science, Polymer Edition, 22 2011; 4(6):541-556. >>> Poly(L-lactide); IV 0.9-1.20 dL/g; tissue engineering (nanocomposite); biocompatibility; "SWNTs in combination with biodegradable polymers could open new perspectives in tissue engineering." p. 542; "In light of these data PLLA/SWNTs-COOH shows good biocompatibility and may be a promising biomaterial candidate in promoting bone regeneration." p. 554.

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 ligamentΓÇôbone 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.

L00221 Saadai P, Nout YS, Encinas J, Wang A, Downing TL, Beattie MS et al. Prenatal repair of myelomeningocele with aligned nanofibrous scaffoldsΓÇöa pilot study in sheep. Journal of Pediatric Surgery 2011; 46(12):2279-2283. >>> Poly(L-lactide); IV 1.09 dL/g; tissue engineering (nanofiber scaffold); schematic representation of nanofibrous inner (A) and outer scaffolds (B), Fig 1.

L00224 Phipps MC, Clem WC, Catledge SA, Xu Y, Hennessy KM, Thomas V et al. Mesenchymal stem cell responses to bone-mimetic electrospun matrices composed of polycaprolactone, collagen I and nanoparticulate hydroxyapatite. PloS one 2011; 6(2):1-8. >>> Poly(e-caprolactone); MW 110 kDa in HFIP; tissue engineering (scaffold, hydroxyapatite); drug delivery (nanoparticles); electrospinning.

L00155 Tan GK, Dinnes DL, Myers PT, Cooper-White JJ. Effects of biomimetic surfaces and oxygen tension on redifferentiation of passaged human fibrochondrocytes in 2D and 3D cultures. Biomaterials 2011; 32(24):5600-5614. >>> Poly(DL-lactide-co-glycolide); 75:25; tissue engineering (scaffold); scaffold prepared by a thermally induced phase separation method.

L00232 Kim JW, Ho WJ, Wu BM. The role of the 3D environment in hypoxia-induced drug and apoptosis resistance. Anticancer research 2011; 31(10):3237-3245. >>> Poly(DL-lactide-co-glycolide); tissue engineering (scaffold); scaffolds prepared using solvent casting and particulate leaching.

L00090 Khan MS, Fon D, Li X, Tian J, Forsythe J, Garnier G et al. Biosurface engineering through ink jet printing. Colloids and Surfaces B: Biointerfaces 2010; 75(2):441-447. >>> Poly(ε-caprolactone); tissue engineering (scaffold, nanofiber); "bioprinting has the capability to become a rapid and accurate process of generating NGF concentration gradient patterns for controlling neuron growth." p. 441; PCL was dissolved in a solvent mixture consisting of chloroform and methanol; proteins were printed on the polymeric scaffolds; electrospinning.

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.

L00107 Pritchard CD, Slotkin JR, Yu D, Dai H, Lawrence MS, Bronson RT et al. Establishing a model spinal cord injury in the African green monkey for the preclinical evaluation of biodegradable polymer scaffolds seeded with human neural stem cells. Journal of neuroscience methods 2010; 188(2):258-269. >>> Poly(DL-lactide-*co*-glycolide); 50:50; IV 0.55 - 0.75 dL/g; tissue engineering (scaffold, human neural stem cells); monkey (African, green); 82 days; spinal cord injury; "biodegradable porous scaffolds seeded with neural stem cells (NSC) have demonstrated potential as a strategy for the treatment of central nervous system lesions" p. 259; targeted delivery (spinal cord).

L00106 Berry SM, Warren SP, Hilgart DVA, Schworer AT, Pabba S, Gobin AS et al. Endothelial cell scaffolds generated by 3D direct writing of biodegradable polymer microfibers. Biomaterials 2010; 32(7):1872-1879. >>> Poly(L-lactide); poly(DL-lactide); poly(DL-lactide-*co*-glycolide);poly(ε-caprolactone); 50:50; 75:25; IV 0.90 - 1.20 dL/g in chloroform (PLA); IV 0.55 - 0.75 dL/g in 1,2 DCE (DL-PLA); IV 0.76 - 0.94 dL/g in 1,2 DCE (50:50 PLGA); IV 0.55 - 0.75 dL/g in chlorobenzene (75:25 PLGA); IV 1.00 - 1.30 dL/g (PCL); tissue engineering (scaffold); >6 weeks; polymer details table, p. 1873, table 1; biodegradation table p. 1875, fig 4.

L00131 Caparso AV, Durand DM, Mansour JM. A nerve cuff electrode for controlled reshaping of nerve geometry. Journal of biomaterials applications 2009; 24(3):247-273. >>> Poly(DL-lactide-*co*-glycolide); 50:50; 65:35; tissue engineering (film, nerve cuff); rat;

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.

L00061 Yang H, Dong L. Selective Nanofiber Deposition Using a Microfluidic Confinement Approach. Langmuir 2009; 26(3):1539-1543. >>> Poly(DL-lactide); IV 0.69 dL/g; tissue engineering (nanofiber); in vitro; lectrospinning; a novel method to create microsized, structurally accurate, arbitrarily shaped patterns of both random and aligned nanofibers.

L00017 Lee JY, Bashur CA, Goldstein AS, Schmidt CE. Polypyrrole-coated electrospun PLGA nanofibers for neural tissue applications. Biomaterials 2009; 30(26):4325-4335. >>> Poly(DL-lactide-*co*-glycolide); 75:25; IV 0.55-0.75 dL/g; tissue engineering (nanofibers); in vitro; electrospinning; neuronal tissue scaffolds; electroconducting nanofibers.

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.

L00020 Mirani RD, Pratt J, Iyer P, Madihally SV. The stress relaxation characteristics of composite matrices etched to produce nanoscale surface features. Biomaterials 2009; 30(5):703-710. >>> Poly(DL-lactide-*co*-glycolide); 50:50; MW 90-120 kDa; tissue engineering (scaffold); In vitro; composite matrix consisting of two porous compartments of chitosan reinforced with a thin membrane of PLGA.

L00011 Forte G, Franzese O, Pagliari S, Pagliari F, Di Francesco A, Cossa P et al. Interfacing Sca-1 pos Mesenchymal Stem Cells with Biocompatible Scaffolds with Different Chemical Composition and Geometry. Journal of biomedicine & biotechnology 2009; 2009:1-10. >>> Poly(L-lactide); tissue engineering (scaffold film); polymer was diluted in methylene chloride and then spincoated onto glass coverslips (2mm diameter) by applying 0.5mL of 20% solution and spinning at 400 rpm.

L00012 Ikeda R, Fujioka H, Nagura I, Kokubu T, Toyokawa N, Inui A et al. The effect of porosity and mechanical property of a synthetic polymer scaffold on repair of osteochondral defects. International Orthopaedics 2009; 33(3):821-828. >>> Poly(DL-lactide-*co*-glycolide); 50:50; IV 1.08 dL/g at 30°C in HFIP; tissue engineering (scaffold, orthopedic); rabbit; images of scaffolds (p.822).

L00125 Gay S, Arostegui S, Lemaitre J. Preparation and characterization of dense nanohydroxyapatite/PLLA composites. Materials Science and Engineering C 2009; 29(1):172-177. >>> Poly(L-lactide); IV 1.04 dL/g in chloroform; tissue engineering (composite, hydroxyapatite, orthopedic);

L00118 Jose MV, Thomas V, Dean DR, Nyairo E. Fabrication and characterization of aligned nanofibrous PLGA/Collagen blends as bone tissue scaffolds. Polymer 2009; 50(15):3778-3785. >>> Poly(DL-lactide-*co*-glycolide); 85:15; tissue engineering (scaffold); electrospinning; "...the addition of collagen to PLGA resulted in narrowing of the diameter distribution and a reduction in average diameter." p. 3778.

L00021 Cartiera MS, Johnson KM, Rajendran V, Caplan MJ, Saltzman WM. The uptake and intracellular fate of PLGA nanoparticles in epithelial cells. Biomaterials 2009; 30(14):2790-2798. >>> Poly(DL-lactide-*co*-glycolide); 50:50; IV 0.59 dL/g - MW 30-70 kDa; tissue engineering (nanoparticles); in vitro;

L00057 Forte G, Carotenuto F, Pagliari F, Pagliari S, Cossa P, Fiaccavento R et al. Criticality of the biological and physical stimuli array inducing resident cardiac stem cell determination. Stem Cells 2008; 26(8):2093-2103. >>> Poly(L-lactide); poly(DL-lactide-*co*-glycolide); 75:25; tissue engineering (scaffold); in vitro;

L00049 Huang CK, Huang W, Zuk P, Jarrahy R, Rudkin GH, Ishida K et al. Genetic markers of osteogenesis and angiogenesis are altered in processed lipoaspirate cells when cultured on three-dimensional scaffolds. Plastic and Reconstructive Surgery 2008; 121(2):411-423. >>> Poly(DL-lactide-*co*-glycolide); 85:15; IV 0.72 dL/g in chloroform; tissue engineering (scaffold; scaffold film); in vitro; "When an inert three-dimensional poly(L-lactide-co-glycolide) scaffold was introduced, the pattern and sequence of gene expression changed significantly" p. 411.

L00053 Choi JS, Lee SJ, Christ GJ, Atala A, Yoo JJ. The influence of electrospun aligned poly (ε-caprolactone)/collagen nanofiber meshes on the formation of self-aligned skeletal muscle myotubes. Biomaterials 2008; 29:2899-2906. >>> Poly(ε-caprolactone); IV 1.77 dL/g in chloroform at 30 C; tissue engineering (nanofiber mesh); in vitro; Schematic illustration of the electrospinning setup p. 2900.

L00054 Cuddihy MJ, Kotov NA. Poly (lactic-co-glycolic acid) bone scaffolds with inverted colloidal crystal geometry. Tissue Engineering Part A 2008; 14(10):1639-1649. >>> Poly(DL-lactide-*co*-glycolide); 85:15; tissue engineering (bone scaffold); in vitro; "The scaffolds demonstrated high mechanical properties for PLGA alone (>50 MPa), in vitro biocompatibility...making them promising for a highly controllable bone tissue engineering scaffold".

L00030 Armentano I, Dottori M, Puglia D, Kenny JM. Effects of carbon nanotubes (CNTs) on the processing and in-vitro degradation of poly (dl-lactide-co-glycolide)/CNT films. Journal of Materials Science: Materials in Medicine 2008; 19(6):2377-2387. >>> Poly(DL-lactide-*co*-glycolide); 50:50; IV 0.58 dL/g ; tissue engineering (nanocomposite film); in vitro; physical stability and morphology of PLGA films; "the presence of carboxylic groups in functionalized SWNTs-COOH accelerated the hydrolytic degradation of the PLGA matrix and the weight loss of the nanocomposites." p. 2384.

L00035 Horning JL, Sahoo SK, Vijayaraghavalu S, Dimitrijevic S, Vasir JK, Jain TK et al. 3-D tumor model for in vitro evaluation of anticancer drugs. Molecular Pharmaceutics 2008; 5(5):849-862. >>> Poly(DL-lactide); IV 0.17 dL/g; 0.44 dL/g; 0.66 dL/g; tissue engineering (scaffold); in vitro; cancer; large and porous biodegradable polymeric microspheres were used as a scaffold for 3-D growth of cancer cells; " (PLGA) are extensively used because of their biocompatibility and high mechanical strength" p. 850; "We used PLA polymer as it demonstrated better cell growth than PLGA polymer in our previous study." p. 851.

L00098 Lee SJ, Oh SH, Liu J, Soker S, Atala A, Yoo JJ. The use of thermal treatments to enhance the mechanical properties of electrospun poly (ε-caprolactone) scaffolds. Biomaterials 2008; 29(10):1422-1430. >>> Poly(ε-caprolactone); IV 1.77 dL/g in chloroform at 30 C; tissue engineering (nanofiber scaffold); electrospinning; "this study suggests that the introduction of thermal fiber bonding to electrospun PCL scaffolds improved the biomechanical properties of these scaffolds, making them more suitable for tissue engineering applications." p. 1422; "After thermal fiber bonding of the electrospun PCL scaffolds, elongation at break as well as the tensile strength of the scaffolds were improved." p. 1428.

L00022 Zou J, Asukas J, Inha T, Toppila E, KellomΣki M, Pyykk÷ I. Biocompatibility of Different Biopolymers After Being Implanted Into the Rat Cochlea. Otology & Neurotology 2008; 29(5):714-719. >>> Poly(DL-lactide-co-ε-caprolactone); poly(ε-caprolactone); 75:25; IV 0.71 dL/g; IV 0.72 dL/g; tissue engineering (biocompatibility testing); rat (male and female Sprague-Dawley; 200-250 g); assessed biocompatibility of different biopolymers with cochlea implant.The rods were cut into samples of diameter of 0.5 mm and length of 2 mm; good methods (p. 715).

L00029 Zeugolis DI, Khew ST, Yew ESY, Ekaputra AK, Tong YW, Yung LYL et al. Electro-spinning of pure collagen nano-fibres - Just an expensive way to make gelatin? Biomaterials 2008; 29(15):2293-2305. >>> Poly(ε-caprolactone); tissue engineering (nanofiber, scaffold); electrospinning.

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);

L00048 Ekaputra AK, Prestwich GD, Cool SM, Hutmacher DW. Combining electrospun scaffolds with electrosprayed hydrogels leads to three-dimensional cellularization of hybrid constructs. Biomacromolecules 2008; 9:2097-2103. >>> Poly(ε-caprolactone); tissue engineering (scaffold); electrospinning.

L00036 Mondalek FG, Lawrence BJ, Kropp BP, Grady BP, Fung KM, Madihally SV et al. The incorporation of poly (lactic-co-glycolic) acid nanoparticles into porcine small intestinal submucosa biomaterials. Biomaterials

2008; 29(9):1159-1166. >>> Poly(DL-lactide-*co*-glycolide); 50:50; IV 1.05 dL/g - MW 106 kDa; tissue engineering (scaffold);

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.

L00039 Petrigliano FA, English CS, Barba D, Esmende S, Wu BM, allister DR. The effects of local bFGF release and uniaxial strain on cellular adaptation and gene expression in a 3D environment: implications for ligament tissue engineering. Tissue Engineering 2007; 13(11):2721-2731. >>> Poly(ε-caprolactone); IV 1.1 dL/g in chloroform - MW 100 kDa; tissue engineering (scaffold); "Scaffolds were treated with I125-bFGF and subjected to mechanical strain;" "mechanical stimulation had no effect on growth factor release from the scaffold in this system." p. 2721.

L00089 Patel S, Kurpinski K, Quigley R, Gao H, Hsiao BS, Poo MM et al. Bioactive nanofibers: synergistic effects of nanotopography and chemical signaling on cell guidance. Nano Lett 2007; 7(7):2122-2128. >>> Poly(L-lactide); IV 1.09 dL/g; tissue engineering (scaffold, nanofiber); in vitro; "Electrospinning technology can be used to fabricate nonwoven nanofibrous scaffolds from biological and/or synthetic polymers and has tremendous potential for tissue engineering applications." p. 2122.

L00088 Roh JD, Nelson GN, Udelsman BV, Brennan MP, Lockhart B, Fong PM et al. Centrifugal seeding increases seeding efficiency and cellular distribution of bone marrow stromal cells in porous biodegradable scaffolds. Tissue Engineering 2007; 13(11):2743-2749. >>> Poly(L-lactide-*co*-ε-caprolactone); 50:50; MW 263.8 kDa; tissue engineering (scaffold);

L00101 Nagura I, Fujioka H, Kokubu T, Makino T, Sumi Y, Kurosaka M. Repair of osteochondral defects with a new porous synthetic polymer scaffold. The Journal of bone and joint surgery (British) 2007; 89(2):258-264. >>> Poly(DL-lactide-*co*-glycolide); 50:50; IV 1.08 dL/g in HFIP; tissue engineering (scaffold, orthopedic); rabbit; "Our findings suggest that in an animal model the new porous PLG scaffold is effective for repairing full-thickness osteochondral defects without cultured cells and growth factors." p. 258; photograph of PLGA scaffold p. 259; pore size was < 100 microns .

L00127 Radulescu D, Dhar S, Young CM, Taylor DW, Trost HJ, Hayes DJ et al. Tissue engineering scaffolds for nerve regeneration manufactured by ink-jet technology. Materials Science and Engineering C 2007; 27(3):534-539. >>> Poly(DL-lactide); poly(DL-lactide-co-ε-caprolactone); 80:20; 25:75; tissue engineering (scaffold); nerve regeneration; tissue scaffold printing technology.

L00126 Zhang N, Nichols HL, Tylor S, Wen X. Fabrication of nanocrystalline hydroxyapatite doped degradable composite hollow fiber for guided and biomimetic bone tissue engineering. Materials Science and Engineering C 2007; 27(3):599-606. >>> Poly(DL-lactide-*co*-glycolide); 50:50; IV 0.2 dL/g - MW 51.9 kDa; tissue engineering (scaffold); < 8 weeks; schematic of scaffold p. 600; electrospinning.

L00074 Kavlock KD, Pechar TW, Hollinger JO, Guelcher SA, Goldstein AS. Synthesis and characterization of segmented poly (esterurethane urea) elastomers for bone tissue engineering. Acta Biomaterialia 2007; 3(4):475-484. >>> Poly(DL-lactide-*co*-glycolide); 75:25; tissue engineering (orthopedic); PLGA used for control films.

L00065 Rowlands AS, Lim SA, Martin D, Cooper-White JJ. Polyurethane/poly (lactic-co-glycolic) acid composite scaffolds fabricated by thermally induced phase separation. Biomaterials 2007; 28(12):2109-2121. >>> Poly(DL-lactide-*co*-glycolide); 75:25; tissue engineering (scaffold); "The presence of PLGA throughout a PU scaffold gave rise to improved cell attachment and viability when compared to a scaffold fabricated from PU alone" p. 2120.

L00079 Lickorish D, Guan L, Davies JE. A three-phase, fully resorbable, polyester/calcium phosphate scaffold for bone tissue engineering: Evolution of scaffold design. Biomaterials 2007; 28(8):1495-1502. >>> Poly(DL-lactide-*co*-glycolide); 75:25; IV 1.33 dL/g; tissue engineering (scaffold, orthopedic); nice microscopy images of scaffold.

L00086 Park K, Ju YM, Son JS, Ahn KD, Han DK. Surface modification of biodegradable electrospun nanofiber scaffolds and their interaction with fibroblasts. Journal of Biomaterials Science, Polymer Edition 2007; 18(4):369-382. >>> Poly(glycolic acid); tissue engineering (scaffold); electrospinning; "fibroblast proliferation was found to be much better on the surfacemodified nanofibrous scaffolds." p. 369; PGA.

L00083 Liao S, Watari F, Zhu Y, Uo M, AKASAKA T, Wang W et al. The degradation of the three layered nano-carbonated hydroxyapatite/collagen/PLGA composite membrane in vitro. Dental Materials 2007; 23(9):1120-1128. >>> Poly(DL-lactide-*co*-glycolide); 75:25; IV 0.72 dL/g; tissue engineering (guided tissue membrane); in vitro; 12 weeks; periodontal therapy.

L00005 Bashur CA, Dahlgren LA, Goldstein AS. Effect of fiber diameter and orientation on fibroblast morphology and proliferation on electrospun poly (D, L-lactic-co-glycolic acid) meshes. Biomaterials 2006; 27(33):5681-5688. >>> Poly(DL-lactide-*co*-glycolide); 75:25; IV 0.55-0.75 dL/g; tissue engineering (scaffold mesh; ligament tissues); electrospinning; although PLGA is a well characterized, biocompatible, resorbable material used in many tissue-engineering applications, its tendency to deform plastically under applied strains undermines its suitability for ligament tissue engineering. Degradable elastomeric materials, such as poly(esterurethane)ureas and poly(e-caprolactone-co-lactide) may prove more applicable.

L00100 Dunn JCY, Chan WY, Cristini V, Kim JS, Lowengrub J, Singh S et al. Analysis of cell growth in three-dimensional scaffolds. Tissue Engineering 2006; 12(4):705-716. >>> Poly(DL-lactide-*co*-glycolide); 85:15; IV 0.6 dL/g; tissue engineering (scaffold);

L00064 Wen X, Tresco PA. Fabrication and characterization of permeable degradable poly (DL-lactide-co-glycolide)(PLGA) hollow fiber phase inversion membranes for use as nerve tract guidance channels. Biomaterials 2006; 27(20):3800-3809. >>> Poly(DL-lactide-*co*-glycolide); 50:50; IV 0.2 dL/g - MW 51.9 kDa - Mn 34 kDa ; tissue engineering (hollow fiber membrane, HFM); 8 weeks; Fabricated using a wet phase inversion technique; "under simulated physiological conditions in vitro, PLGA HFMs exhibited a degradation profile to accommodate nervous system regeneration and axonal outgrowth" p. 3800; degradation data p.3804, section 3.2; "PLGA and its degradation products do not appear to result in untoward inflammatory response. In the CNS, aliphatic polyesters have been used mainly for drug delivery applications in a microsphere form with reports of no visible reaction to the biodegradable substance or its metabolites. These findings are in agreement with those from other studies on this subject, which indicate that polylactide (PLA) devices affixed to divided nerves have no adverse effect on nerve regeneration." p. 3806.

L00060 Cao Y, Mitchell G, Messina A, Price L, Thompson E, Penington A et al. The influence of architecture on degradation and tissue ingrowth into three-dimensional poly (lactic-co-glycolic acid) scaffolds in vitro and in vivo. Biomaterials 2006; 27(14):2854-2864. >>> Poly(DL-lactide-*co*-glycolide); 75:25; IV 0.69 dL/g - 110 kDa in chloroform at 30 C; tissue engineering (scaffold); in vitro; rat (SD, male, 300-380 g);

L00008 Zong X, Li S, Chen E, Garlick B, Kim K, Fang D et al. Prevention of postsurgery-induced abdominal adhesions by electrospun bioabsorbable nanofibrous poly (lactide-co-glycolide)-based membranes. Annals of surgery 2004; 240(5):910. >>> Poly(DL-lactide-*co*-glycolide); 75:25; IV 0.55-0.75 dL/g; tissue engineering (tissue membrane); rat; electrospinning; comparison of PLGA and PLGA/PEG-PLA polymer blend (85:15 by weight).

L00123 Cao Y, Croll TI, Cooper-White JJ, O'Connor AJ, Stevens GW. Production and surface modification of polylactide-based polymeric scaffolds for soft-tissue engineering. Methods in Molecular Biology 2004; 238:87-111. >>> Poly(DL-lactide-*co*-glycolide); 75:25; IV 0.69 dL/g in chloroform; tissue engineering (scaffold);

L00009 Zong X, Ran S, Kim KS, Fang D, Hsiao BS, Chu B. Structure and morphology changes during in vitro degradation of electrospun poly (glycolide-co-lactide) nanofiber membrane. Biomacromolecules 2003; 4(2):416-423. >>> Poly(DL-lactide); poly(DL-lactide-*co*-glycolide); 75:25; IV 0.55-0.75 dL/g; tissue engineering (nanofiber); in vitro; electrospinning; ..."water may have little effect on the shrinkage of electrospun PLGA membranes." (p. 418); degradation research.

L00121 Zong X, Kim K, Fang D, Ran S, Hsiao BS, Chu B. Structure and process relationship of electrospun bioabsorbable nanofiber membranes. Polymer 2002; 43(16):4403-4412. >>> Poly(DL-lactide); IV 0.55-0.75 dL/g; tissue engineering (nanofiber); electrospinning.

L00003 Agrawal CM, McKinney JS, Lanctot D, Athanasiou KA. Effects of fluid flow on the in vitro degradation kinetics of biodegradable scaffolds for tissue engineering. Biomaterials 2000; 21(23):2443-2452. >>> Poly(DL-lactide-*co*-glycolide); 50:50; IV 0.69 dL/g; tissue engineering (scaffold); in vitro; 1,2,4,6 weeks; degradation research.

LR00001 Athanasiou KA, Agrawal CM, Barber FA, Burkhart SS. Orthopaedic applications for PLA-PGA biodegradable polymers. Arthroscopy: The Journal of Arthroscopic & Related Surgery 1998; 14(7):726-737. >>> Polylactic acid; polyglycolic acid; tissue engineering (orthopedic); review article - Birmingham Polymers cited as a reference.