Recent References Describing Use of LACTEL® PLGA (2015-2019)


**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide); IV 0.55-0.75 dL/g; Device; electrospinning.


**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide) ester terminated; IV 0.26-0.54 dL/g; Drug delivery (bovine serum albumin);


**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide) ester terminated - IV 0.55-0.75 dL/g; Drug delivery (nanoparticles, paclitaxel); mice; drug loading: 15-16 % w/w.


**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide) - IV 0.55-0.75 dL/g; Drug delivery (nanoparticles: BAR peptide); mice (BALB/cByJ);


**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide) ester terminated - MW 52-54 kDa, IV 0.55-0.75 dL/g; Drug delivery (nanoparticles: etravirine, azidothymidine, BSA, GFP plasmid); encapsulation efficiencies explored for each agent.

**L00405:** Y. Gao, S. Vijayaraghavalu, M. Stees, B. K. Kwon and V. Labhasetwar. Evaluating accessibility of intravenously administered nanoparticles at the lesion site in rat and pig contusion models of spinal cord injury. Journal of Controlled Release 2019;302(160-168

**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide), IV 0.76-0.94 dL/g; Drug delivery (nanoparticles); rat (Sprague-Dawley), pig (Yucatan mini);


**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide); Tissue engineering (scaffold, curcumin); curcumin-loaded PLGA particles (CP) were fabricated using single emulsion-solvent evaporation method. "A dipping method was used to coat the CP particles on the porous iron".

LACTEL Comments: 50:50 Poly(DL-lactide-co-glycolide) ester; IV 0.55-0.75 dL/g; Drug delivery (nucleic acids, DNA, C6 dye, DiD dye); mice; targeted delivery (intrauterine); biocompatibility: "...we observed no significant differences in the long-term survival between untreated mice and those that received NP treatment in utero."


LACTEL Comments: 50:50 Poly(DL-lactide-co-glycolide); Drug delivery (stent coating, sirolimus); 10.17106/jbr.32.71;


LACTEL Comments: 50:50 Poly(DL-lactide-co-glycolide) ester terminated; MW 50-70 kDa; Drug delivery (dexamethasone); electrospaying.


LACTEL Comments: 50:50 Poly(DL-lactide-co-glycolide) ester terminated; MW 27 kDa; Drug delivery (SC, dolutegravir); mice (BLT humanized), primate (rhesus macaque); antiretroviral; biocompatibility (mice): "The formulation was well tolerated by the mice and no injection site reactions or other signs of overt toxicity, changes in behavior, movement, water consumption or weight loss were noted." biocompatibility (primate): "The implants were well tolerated with little or no sign of toxicity for 5 months."


LACTEL Comments: 50:50 Poly(DL-lactide-co-glycolide) acid terminated; IV 0.67 dL/g, MW approx 44 kDa; Drug delivery (clarithromycin, PO); mice; polymer was mixed with human gastric adenocarcinoma membrane vesicles, polymer polydispersity approx 2.


LACTEL Comments: 85:15 Poly(DL-lactide-co-glycolide); Tissue engineering (microfibers, orthopedic, bone regeneration); electrospinning; in vitro mineralization of microfiber meshes; control of surface hydrophobicity to improve performance.


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**LACTEL Comments**: Poly(DL-lactide) - IV 0.55-0.75 dL/g, 85:15 Poly(DL-lactide-co-glycolide) - IV 0.55-0.75 dL/g, MW 85.2 kDa, 50:50 Poly(DL-lactide-co-glycolide) - IV 0.15-0.25 dL/g, MW 10.6 kDa; Drug delivery (montelukast, large respirable porous particles);

**L00338**: O. Karaman, A. Kumar, S. Moeinzadeh, X. He, T. Cui and E. Jabbari. Effect of surface modification of nanofibres with glutamic acid peptide on calcium phosphate nucleation and osteogenic differentiation of marrow stromal cells. Journal of tissue engineering and regenerative medicine 2017;10(E132-E146)

**LACTEL Comments**: 50:50 Poly(DL-lactide-co-glycolide); IV 1.1 dL/g - MW 105 kDa; Tissue engineering (nanofibers); rat; formation of microsheets; effects on osteogenic differentiation of rat marrow stromal cells; "potentially useful as a biomimetic matrix in the regeneration of skeletal tissues" (pg. E144).


**LACTEL Comments**: 50:50 Poly(DL-lactide-co-glycolide) acid terminated; IV 0.55-0.75 dL/g, MW 31-57 kDa; Drug Delivery (acyclovir); electrospinning.


**LACTEL Comments**: Poly(DL-lactide-co-glycolide) ester terminated; IV 0.55-0.75 dL/g; Drug delivery (ketoconazole); targeted delivery (eye).


**LACTEL Comments**: 50:50 Poly(DL-lactide-co-glycolide); Drug delivery (biodegradable fibers, dexamethasone); degradation profile available (pg 1018); filament processed by wet-spinning procedure.


**LACTEL Comments**: 50:50 Poly(DL-lactide-co-glycolide) - MW 40-50 kDa; Drug delivery (zinc composite nanoparticles);


**LACTEL Comments**: 50:50 Poly(DL-lactide-co-glycolide) ester terminated - IV 0.95-1.20 dL/g, MW 91-120 kDa; Drug delivery (bovine serum albumin, nanoparticles);

LACTEL Comments: 50:50 Poly(DL-lactide-co-glycolide) acid terminated; IV 0.15-0.25 dL/g; Drug delivery (nanoparticles, magnesium gluconate dihydrate); microspheres were fabricated by utilizing the double emulsion solvent evaporation technique with some modifications; "Cytotoxicity levels did not surpass the 15% cytotoxicity marker...which indicates sufficient biocompatibility" (pg. 64).

LACTEL Comments: 50:50 Poly(DL-lactide-co-glycolide); IV 0.76-0.94 dL/g; Drug delivery (nanoparticles, superoxide dismutase, catalase); rat (male Sprague-Dawley); double-emulsion solvent-evaporation method used for nanoparticle production; "delivery of nano-CAT/SOD at the time of reperfusion effectively protects neuronal cells" (pg. 178).

LACTEL Comments: 85:15 Poly(DL-lactide-co-glycolide) - IV 0.62 dL/g, MW 87 kDa; Drug delivery (ketorolac, microspheres); targeted delivery (eye, vitreous).

LACTEL Comments: 50:50 Poly(DL-lactide-co-glycolide) acid terminated; IV 0.20 dL/g; Drug delivery (nanoparticles, docetaxel); mice;

LACTEL Comments: Poly(DL-lactide-co-glycolide) acid terminated; Drug delivery (nanoparticles, doxorubicin); mice; nanoparticles prepared by double emulsion method.

L00377: W. Lee and J. Park. 3D patterned stem cell differentiation using thermoresponsive methylcellulose hydrogel molds. SCIENTIFIC REPORTS 2016;6(29408):doi: 10.1038/srep29408
LACTEL Comments: 50:50 Poly(DL-lactide-co-glycolide) - MW 85 kDa, 65:35 Poly(DL-lactide-co-glycolide) - MW 95 kDa; Drug delivery (microparticles; microspheres were prepared through the double emulsion process (water-in-oil-in-water (w/o/w))).

LACTEL Comments: 50:50 Poly(DL-lactide-co-glycolide) ester terminated; IV 0.95-1.2 dL/g; Drug delivery (nanoparticles, paclitaxel, near-infrared dye SDB 5491); mice; nanoparticles prepared by emulsion-solvent evaporation.


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**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide) ester terminated; IV 0.55-0.75 dL/g; Drug delivery (nanoparticles, chemotherapeutic PHT-427); PHT-427 is an AKT/PDK1 inhibitor.


**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide); MW 50-75 kDa; Biomaterial (microcapsules; microcapsules were prepared by w/o/w emulsification solvent evaporation method.


**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide); MW 33 kDa; Drug delivery (microcapsules, doxorubicin); mice; Microcapsules were generated using a mono-axial nozzle ultrasonic atomizer; targeted delivery (tumor).


**LACTEL Comments:** 85:15 Poly(DL-lactide-co-glycolide) ester terminated; IV 0.55-0.75 dL/g; Tissue engineering (scaffold containing DNA); mice (CD-1 nude); DNA encoded for BMP-2, luciferase or green fluorescent protein; targeted delivery (bone defect); scaffold prepared using a supercritical CO2 method; achieved sustained delivery over 2 months.


**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide); Drug delivery (particles, CD4 and CD8 peptide antigens); mice (C57/BL6); particles were prepared using a single emulsion technique.


**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide), acid terminated; MW 13.8 kDa; Drug delivery; rat;


**LACTEL Comments:** Poly(DL-lactide-co-glycolide); MW 66 kDa; Drug delivery (nanoparticles, pDNA); Rat; prepared using a double emulsion-solvent evaporation method; spinal cord injury; testing done on drug release, cytotoxicity, cellular uptake, and transfection.


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**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide), IV 0.55-0.75 dL/g; Poly(L-lactide) IV 0.90-1.20 dL/g; Drug delivery (particles, rapamycin, isoniazid, rifabutin); mice (BALB/c); particles prepared by spray-drying; targeted delivery (lung).


**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide) ester terminated; IV 0.55-0.75 dL/g; Drug delivery (sub-micron particles, bovine serum albumin); particles synthesized via a W/O/W technique.


**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide) ester terminated; IV 0.55-0.75 dL/g; Drug delivery (nanoparticles, in vitro, protein); particles were synthesized via a W/O/W emulsion technique; centrifugal fractioning used to control population distribution of particles.


**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide); IV 0.95-1.20 dL/g; Drug delivery (microspheres); microspheres were prepared by a modified S/O/W emulsion method.


**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide); 75:25 Poly(DL-lactide-co-glycolide); IV 0.55-0.75 dL/g; Tissue engineering (scaffold); scaffolds prepared using a solution-casting/salt-leaching technique.


**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide); IV 0.26–0.54 dL/g; Drug delivery (nanoparticles, paclitaxel, NIR dye SDB5700); mice (male, athymic, nude); Nanoparticles were prepared by a single oil-in-water emulsion solvent evaporation method.


**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide); IV 0.55-0.75 dL/g; Drug delivery (nanoparticles, in vivo testing); using blend particles to model composition of carrier affects endosomal/lysosomal escape of cargos and endosomal/lysosomal enzymes with different sizes.


**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide); IV 0.55-0.75 dL/g; Drug delivery (nanoparticles, ovalbumin, Type 2 Herpes Simplex Virus glycoprotein D); C57BL/6 mice;
L00319: M. Zamani, M. P. Prabhakaran, E. S. Thian and S. Ramakrishna. Controlled delivery of stromal derived factor-1alpha from poly lactic-co-glycolic acid core-shell particles to recruit mesenchymal stem cells for cardiac regeneration. Journal of Colloid and Interface Science 2015;451(144-152)
LACTEL Comments: 50:50 Poly(DL-lactide-co-glycolide); MW 31.3-57.6 kDa; Drug delivery (nanoparticles, stromal derived factor-1a); Coaxial electrospraying; sterilized using UV radiation.

LACTEL Comments: 50:50 Poly(DL-lactide-co-glycolide); Tissue engineering (scaffold); Scaffolds created by dissolving PLG in chloroform, mixing with sieved sucrose particles and drying until all solvent evaporated.

LACTEL Comments: 50:50 Poly(DL-lactide-co-glycolide); IV 0.55-0.75 dL/g; Drug delivery (film production); "excellent biocompatibility, biodegradability, lack of toxicity, and good thermoplasticity" (pg. 1); sterilization by UV radiation.

LACTEL Comments: 50:50 Poly(DL-lactide-co-glycolide); Drug delivery (mesh microstructure); microstructures were fabricated by hot embossing method; Elastic modulus testing at different temperatures.

LACTEL Comments: 50:50 Poly(DL-lactide-co-glycolide) ester terminated; IV 0.67 dL/g; Drug delivery (nanoparticles, nanosphere, a-toxin); mice; produced through nanoprecipitation in acetone.

LACTEL Comments: 50:50 Poly(DL-lactide-co-glycolide) acid-terminated; IV 0.26-0.54 dL/g; Drug delivery (nanoparticles, ceftiofur); Rat (Sprague-Dawley); Nanoparticles were prepared by double-emulsion method; sustained release profile of drug for 20 days.

L00328: M. Stevanovic, N. Filipovic, J. Djurdjevic, M. Lukic, M. Milenkovic and A. Boccaccini. 45S5 Bioglass(R)-based scaffolds coated with selenium nanoparticles or with poly(lactide-co-glycolide)/selenium nanoparticles: Processing, evaluation and antibacterial activity. COLLOIDS AND SURFACES B-BIOINTERFACES 2015;132(208-215)
LACTEL Comments: 50:50 Poly(DL-lactide-co-glycolide); MW 40-50 kDa in acetone; Tissue engineering (scaffold); PLGA/SeNp microspheres were produced using a physicochemical solvent/nonsolvent method.

**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide); IV 0.87 dL/g; Drug delivery (nanoparticles, follicle stimulating hormone); Rat (Sprague Dawley); Targeted delivery (testicles); anatomical and/or ligand targeting; intra-arterial vs. intra-venous injection; nanoparticles formulated via multiple emulsion solvent evaporation technique.


**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide) ester terminated; IV 0.95-1.2 dL/g - MW 91.6-120 kDa; Biomaterial (composite, nickel); particles prepared by W/O/W double emulsion process employing modified polyacrylic acid as stabilizing agent; particles can chelate nickel.


**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide) ether terminated; IV 0.95-1.20 dL/g - MW 91.6-120 kDa; Drug delivery (nanoparticles); nanoparticles synthesized by double emulsion method; emulsion stabilizers; positive properties of PLGA (pg. 33, Results).


**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide) acid terminated; IV 0.67 dL/g - MW 90 kDa; Drug delivery (nanoparticles, curcumin); formulated by solvent displacement method; cIBR, cLABL peptides conjugated on surface of PLGA nanoparticles using carbodiimide reaction; in vitro cytotoxicity testing (pg. 206).


**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide) acid terminated; MW 57.6 kDa; Drug delivery; Solubility parameters and intrinsic viscosity of PLGA in various solvents (pg. 4); cast with bovine serum albumin (BSA) as a model drug.


**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide); IV 0.15-0.25 dL/g; Drug delivery (nanoparticles, oxcarbazepine); prepared at room temperature (22°C-23°C) by a modified solvent displacement method; particle size, size distribution, and zeta potential measurements (in vitro); drug release profile (pg. 1994).

L00335: K. Liu, Z. Sun, M. Nie and Y. Wu. Electrospraying in carbon dioxide-expanded antisolvent. JOURNAL OF SUPERCRITICAL FLUIDS 2015;103(122-129

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**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide) ester terminated; IV 1.15 dL/g; In vitro (morphology research); electrospraying in different atmospheres to study effects on product morphology and morphological control (pg. 123).


**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide) ester terminated; IV 0.55-0.75 dL/g - MW 52-54 kDa; Drug delivery (nanoparticles, maraviroc, etravirine, raltegravir);


**LACTEL Comments:** Poly(DL-lactide-co-glycolide) ester terminated - IVs 0.15 dL/g, 0.55 dL/g, Poly(DL-lactide-co-glycolide) acid terminated - IVs 0.18 dL/g, 0.55 dL/g; Drug delivery (nanoparticles, anti-CD205 antibodies); nanoparticles prepared by double solvent emulsification and single oil in water emulsification solvent evaporation methods.


**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide); Drug delivery (nanoparticles, antigen); nanoparticles prepared using a double emulsion solvent evaporation method with modifications.

**L00359:** Y. Hu, R. Hoerle, M. Ehrich and C. M. Zhang. Engineering the lipid layer of lipid-PLGA hybrid nanoparticles for enhanced in vitro cellular uptake and improved stability. Acta Biomaterialia 2015;28(149-159)

**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide); Drug delivery (nanoparticles, bovine serum albumin); nanoparticles prepared by double emulsion solvent evaporation method with modifications.


**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide) acid terminated; IV 0.67 dL/g; Drug delivery (nanoparticles, docetaxel); rat (male, Sprague-Dawley); particles prepared in a nanoprecipitation process.


**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide); IV 0.82 dL/g in HFIP; Drug delivery (nanofibers, daunorubicin); mice (male, Swiss); electrospinning.

**L00348:** K. Gavrilov, Y. E. Seo, G. T. Tietjen, J. J. Cui, C. J. Cheng and W. M. Saltzman. Enhancing potency of siRNA targeting fusion genes by optimization outside of target sequence. PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA 2015;112(E6597-E6605)

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**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide) ester terminated; IV 0.55-0.75 dL/g; Drug delivery (nanoparticles, siRNA); nanoparticles were prepared using a modified water-in-oil-in-water double-emulsion solvent evaporation technique.


**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide) ester terminated; 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.


**LACTEL Comments:** 85:15 Poly(DL-lactide-co-glycolide); IV 0.63 dL/g; Tissue engineering (scaffold); microparticles formed by emulsion solvent evaporation; 3D printing.


**LACTEL Comments:** Poly(DL-lactide-co-glycolide); Drug delivery (nanospheres, TGF-B1); Tissue engineering (scaffold); nanospheres fabricated by coaxial electrospraying; 3D printing of PLGA.


**LACTEL Comments:** Poly(DL-lactide-co-glycolide); Tissue engineering (scaffold, 3D printing); "3D printer and the nano-ink (i.e., nHA + nanosphere + hydrogel) were employed to fabricate a porous and highly interconnected osteochondral scaffold with hierarchical nano-to-micro structure and spatiotemporal bioactive factor gradients" (pg. 14010); 3D scaffold design and printing (pg. 14012).


**LACTEL Comments:** 50:50 Poly(DL-lactide-co-glycolide); IV 0.86 dL/g in HFIP; Device (mat, sealant for wound repair); mice; Polymer fiber mat prepared by solution blow spinning.


**LACTEL Comments:** Poly(DL-lactide) IV 0.65 dL/g & Mw 90 kDa; 50:50 Poly(DL-lactide-co-glycolide) IV 1.1 dL/g & Mw 105 kDa; Tissue engineering (orthopedic); electrospinning.