

# **PATRICK DELUCA, Ph.D.**

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## **Research Interests**

Dr. DeLuca's research interests and activity are in the following areas:

1. Novel Drug Delivery: The development and evaluation of microparticulate polymeric systems to target drugs. Currently funded projects include: Targeted drug delivery and selective pharmacologic activity using biodegradable microspheres and the development and evaluation of microspheres as peptide and protein delivery systems.

2. Formulation and Process Development of Proteins and Peptides: The use of cryoprotectants is being evaluated for the protection and stabilization of proteins during processing and storage. Additionally, matrices are being developed for administering bone-growth agents.

3. Research in Freeze Drying: Having established an international reputation in this area, projects are under way to optimize freeze-drying cycles of pharmaceuticals and proteins through the acceleration of the mass transfer process.



## **Research Publications/Presentations**

"Stability of Ribonuclease A in Solution and the Freeze Dried State", Townsend, M.W. and DeLuca, P.P., J. Pharm. Sci., 79 (12), 1083-1086, 1990.

"Simultaneous Determination of Prostaglandin E, A, and B, by Reversed-Phase High Performance Liquid Chromatography for the Kinetic Studies of PGE in Solution", Lee, K.C. and DeLuca, P.P., J. of Chrom., 555, 73-80 (1991).

"Skeletal Effects of Calcitonin in Ovariectomized Rats," Wronski, T.J., Yen, C.F., Burton, K.W., Mehta, R.C., Newman, P.S., Soltis, E.E. and DeLuca, P.P., Endocrinology, 129 (4), 2246-2250 (1991).

"In Vivo Evaluation of Biodegradable Progesterone Microspheres in Mares," Gupta, P.K., Mehta, R.C., Douglas, R.H., DeLuca, P.P., J. Contr. Rel., 9, 1502-1506 (1992).

"Sustained Bronchodilation with Isoproterenol Poly(glycolic-co-lactide) Microspheres," Lai, Y., Mehta, R.C., Thacker, A., Yoo, S.D., McNamara, P.J. and DeLuca, P.P., Pharm. Res., 10, 119-125 (1993).

"Characterization Techniques for Biodegradable Poly (D, L-Lactide-Co-Glycolide) Polymers and Microspheres," Hausberger, A.G., DeLuca, P.P., J. of Pharmaceutical and Biomedical Analysis. Vol 13, No. 7, (1995).

"Thermal Analysis of Tertiary Butyl Alcohol-Water System and its Implications on Freeze-Drying," Kasraian, K., DeLuca, P.P., Pharm. Res., Vol 12, No. 4, Pg. 484-490, (1995).

"The Effect of Tertiary Butyl Alcohol (TBA) on the Resistance of the Dry Product Layer During Primary Drying," Kasraian, K., DeLuca, P.P., Pharm. Res., Vol 12, No. 4, pg. 491-495, (1995).