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Contract research and development at Southwest Research Institute

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The Southwest Research Institute (SwRI) is an independent non-profit contract R&D organization and a recognized leader in the field of encapsulation with 65 years of research and development experience ranging from proof-of-concept to production. SwRI has conducted over 1000 different encapsulation, micronization, and particle engineering projects for numerous clients, spanning a wide-variety of application areas. To further support the sponsored programs, SwRI also maintains an in-house program to investigate new encapsulation concepts and improve existing technologies. Institute personnel are experienced with over two dozen encapsulation processes, including atomization, spray coating, coextrusion, chemical emulsion-based methods, and nanoencapsulation techniques to produce capsules with sizes from tens of nanometers to several millimeters. Thousands of materials are available using these techniques to formulate capsules with a wide variety of release mechanisms. The encapsulation technique and formulation selected is based on the needs of the specific application. SwRI also provides pharmaceutical services ranging from early drug discovery through formulation and cGMP manufacturing. Our encapsulation expertise is applied to numerous drug delivery projects focusing on oral, parenteral, nasal, ocular and transdermal routes of administration. Formulation expertise includes micro- and nano-particles, emulsions, suspensions, fibers, and films to optimize product performance. Our unique Rhodium™ small molecule/protein docking platform allows rapid binding site identification and *in silico* screening. We provide analog synthesis, lead selection, optimization, characterization, and scale-up services, as well as chemical development and cGMP manufacturing. This presentation will provide an overview of SwRI's services and recent examples of pharmaceutical development work.

Biography

James D Oxley obtained a Ph.D. in Chemistry from the University of Illinois at Urbana-Champaign. For over 10 years, he has been in the Department of Microencapsulation and Nanomaterials at the Southwest Research Institute. He is currently a Principal Scientist, directing staff engaged in contract research pertaining to controlled release. He has collaborated with hundreds of clients to develop encapsulated and controlled release products for use in various industries, including pharmaceuticals. He is on the Board of Scientific Advisors for the Controlled Release Society, Steering Committee for the Bioencapsulation Research Group, and member of the American Chemical Society.

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