ORGAN CULTURE AS A MODEL FOR EARLY MOLECULAR EVENTS DURING DISTRACTION OSTEOGENESIS

Jason B. Cope, DDS, PhD, Richard P. Harper, DDS, PhD, Lynne A. Opperman, PhD

Texas A&M University Health Science Center - Baylor College of Dentistry, Dallas, Texas.

Project Summary

Rat ulnas and mandibles were used to validate an *in vitro* organ culture as a model for fracture healing and osteodistraction. The study demonstrated that the initial stages of inflammation (i.e., inflammatory cells localized at the fracture site) occurred within the first 3 days of fracture in the absence of a general circulation. These experiments also showed that the bones remained viable in culture for the 6 day study period. ELISA tests demonstrated that the fractured bones produced increased amounts of PDGF and VEGF.