DEPARTMENT OF THE AIR FORCE
59TH MEDICAL WING (AETC)
JOINT BASE SAN ANTONIO - LACKLAND TEXAS

Explanation of Category E Protocol
Wilford Hall USAF Ambulatory Surgical Center, Customer Number 1386

Protocol Title: Evaluation of a targeted analgesic release gel emulsion technology for acute neuropathic pain in rat (Rattus norvegicus) models of peripheral nerve injury

Purpose: This protocol tests an anti-inflammatory and pain relieving drug (Celecoxib) combination for the local and targeted treatment of pain in a rat model. The drug will be gradually released around an injured peripheral nerve as the hydrogel that contains the drug is broken down by the body. This drug system has significant potential in the treatment of acute neuropathic pain (ANP) compared to traditional systemic analgesia. This combination allows for the localized treatment of nerve pain using well established models in the sciatic nerves of rats. This protocol gives the opportunity to demonstrate the efficacy of the drug combination as an analgesic in the Chronic Constriction Injury (CCI) model.

Category E Animal Use justification: The neuropathic pain model commonly used in rats, known as the CCI model, was described in 1988 and has been used frequently in analgesia research. The administration of traditional systemic analgesics to all injured animals in the experimental group is contraindicated based upon the purpose of these experiments. The use of opioids has led to inefficient alleviation of acute neuropathic pain, which results in opioid overdose, dependence, addiction, and tolerance, and therefore are not considered for this protocol. The experimental components thereof will be applied locally to the site of injury or intravenously. In theory, the groups receiving nano-emulsion celecoxib will receive good analgesia as shown in prior published work; however all animals (treated and untreated) will be considered group E.