

AD-A286 090



AD _____

②

MIPR NO: 93MM3511

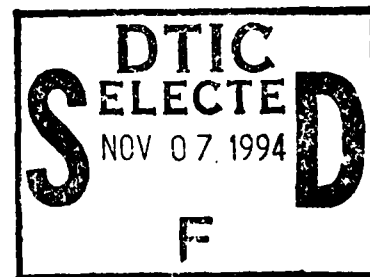
TITLE: DEVELOPMENT OF ULTRA LONG DURATION LOCAL ANESTHETIC
AGENTS IN A RAT MODEL

PRINCIPAL INVESTIGATOR: Mark Kline, CPT, MC

CONTRACTING ORGANIZATION: Combat Anesthesia Research
Pain Management/Anesthesia
Walter Reed Army Medical Center
Washington, DC 20307-5001

REPORT DATE: February 24, 1994

TYPE OF REPORT: Annual Report



PREPARED FOR: U.S. Army Medical Research and
Materiel Command
Fort Detrick
Frederick, Maryland 21702-5012

DISTRIBUTION STATEMENT: Approved for public release;
distribution unlimited

The views, opinions and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy or decision unless so designated by other documentation.

94-34412



48

DTIC QUALITY INSPECTED 5



REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204 Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE 24 February 1994	3. REPORT TYPE AND DATES COVERED Annual Report (12/15/92-9/30/93)	
4. TITLE AND SUBTITLE Development of Ultra Long Duration Local Anesthetic Agents in a Rat Model			5. FUNDING NUMBERS MIPR No. 93MM3511	
6. AUTHOR(S) Benjamin H. Boedeker, M.D. Mark Kline, CPT, MC				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Combat Anesthesia Research Pain Management/Anesthesia Walter Reed Army Medical Center Washington, DC 20307-5001			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army Medical Research and Materiel Command Fort Detrick Frederick, Maryland 21702-5012			10. SPONSORING / MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution unlimited			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) Lecithin-coated tetracaine microcrystals provide an ultra long duration local anesthetic effect without causing toxicity to surrounding tissues or nerves. Lecithin-coated bupivacaine microcrystals also appear to have an ultra long duration local anesthetic effect, although tissue toxicity remains to be evaluated.				
14. SUBJECT TERMS CIC3, Agents, Anesthesia, RA II			15. NUMBER OF PAGES	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT Unlimited	

Memorandum for LTC Dean E. Calcagni, M.D.
Director, Combat Casualty Research Program
USAMRDC

Subject: Annual Report for Clinical Investigation Protocol 2056A "Development of Ultra Long Duration Local Anesthetic Agents in a Rat Model" (FY 93)

1. Progress: We have previously demonstrated that lecithin-coated tetracaine microcrystals provide an ultra long duration local anesthetic effect of 44 hours in the rat tail. We have also previously demonstrated that this formulation is not toxic to skin tissues when placed intradermally. This year we were able to demonstrate that lecithin-coated tetracaine microcrystals do not cause peripheral neurotoxicity when placed directly on the sciatic nerve. In addition, initial data indicate that this formulation is not toxic to the spinal cord.

Initial trials with lecithin-coated bupivacaine microcrystals indicate that this preparation also has an ultra long duration local anesthetic effect, producing a 43 hour block in the rat tail. Clinical trials of this preparation in a human model are scheduled to begin in Jan 94.

2. Summary: Lecithin-coated tetracaine microcrystals provide an ultra long duration local anesthetic effect without causing toxicity to surrounding tissues or nerves. Lecithin-coated bupivacaine microcrystals also appear to have an ultra long duration local anesthetic effect, although tissue toxicity remains to be evaluated.

3. Publications:

B.H. Boedeker, MD, M.D. Kline, MD, M.E. Mattix, DVM, D.G. Dunn, DVM, D.H. Haynes, PhD, W.L. Mondy, BS, P.Z. Kelly, RN, E.W. Lojeski, DO: Peripheral neurotoxicity of lecithin-coated tetracaine microcrystals. *Anesthesiology* 79: A825, 1993

K.A. Burnham, MD, B.H. Boedeker, MD, M.D. Kline, MD, M.E. Mattix, DVM, J. Long, PhD, M.D. Calkins, MD, T. Rapacki, MD, D.H. Haynes, PhD: Spinal cord toxicity of lecithin-coated tetracaine microcrystals in the rat. Submission to ASRA.

M.D. Kline, MD, B.H. Boedeker, MD, K.A. Burnham, MD, M.D. Calkins, MD, D.H. Haynes, PhD: Lecithin-coated bupivacaine microcrystals produce ultra long duration local anesthesia. Submission to ASRA.

B.H. Boedeker, MD, E.W. Lojeski, DO, M.D. Kline, MD, D.H. Haynes, PhD: Ultra long duration local anesthesia produced by injection of lecithin-coated tetracaine microcrystals. Accepted for publication by The Journal of Clinical Pharmacology.

Mark D. Kline

Mark D. Kline, MD
CPT, MC
WRAMC

Accession For	
NTIS CRA&I	☒
DTIC TAB	☐
Unannounced	☐
Justification	
By	
Distribution /	
Availability Codes	
Dist	Avail and/or Special
A-1	