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13. ABSTRACT (Maximum 200 words)
Our AASERT grant covers the salary and other related expenses for Raymond F. Robledo who is a Ph.D. student in the Department of Pharmacology/Toxicology and Center for Toxicology at the University of Arizona. Mr Robledo passed his final Ph.D. examination on May 13, 1998. I will be forwarding a copy of his doctoral dissertation to my AFOSR program manager, Dr Walter J. Kozumbo, when the binding of the document has been completed. Dr Robledo will begin a post-doctoral fellowship in the laboratory of dr Brooke Mossman, Department of Pathology, University of Vermont College of Medicine on July 1, 1998. Raymond's research during the past three years has been outstanding and was highlighted when his abstract concerning our JP-8 jet fuel research was awarded the "Outstanding Student Research Award" for the Inhalation Toxicology Section at the 1997 Society of Toxicology Meeting in Cincinnati, Ohio.

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**FINAL REPORT FOR DEPARTMENT OF DEFENSE AASERT
TRAINING GRANT**

**"RESEARCH TRAINING OF THE EFFECTS OF TOXIC
SUBSTANCES ON THE LUNGS"**

Mark L. Witten, Ph.D., Principal Investigator.

**Department of Pediatrics and The Center for Toxicology, The
University of Arizona, Tucson, Arizona.**

Report Covers the Period of July 1, 1995 to June 30, 1998.

Overall Progress

Our AASERT grant covers the salary and other related expenses for Raymond F. Robledo who is a Ph.D. student in the Department of Pharmacology/Toxicology and Center for Toxicology at the University of Arizona. Mr. Robledo passed his final Ph.D. examination on May 13, 1998. I will be forwarding a copy of his doctoral dissertation to my AFOSR program manager, Dr. Walter J. Kozumbo, when the binding of the document has been completed. Dr. Robledo will begin a post-doctoral fellowship in the laboratory of Dr. Brooke Mossman, Department of Pathology, University of Vermont College of Medicine on July 1, 1998.

Raymond's research during the past three years has been outstanding and was highlighted when his abstract concerning our JP-8 jet fuel research was awarded the "Outstanding Student Research Award" for the Inhalation Toxicology Section at the 1997 Society of Toxicology Meeting in Cincinnati, Ohio.

Publications

Manuscripts and Conference Proceedings

- (1) **Robledo RF**, Breceda V, Tollinger BJ, Wang S, Lantz RC, Leeman SE, Witten ML: Substance P attenuates lung injury caused by chronic hydrocarbon exposure. PROCEEDINGS OF THE TACHYKININS '95 INTERNATIONAL MEETING, Florence, Italy, 1995, pp. 190.
- (2) Witten ML, **Robledo RF**, Lantz RC, Breceda V: Chronic effects of JP-8 jet fuel exposure. PROCEEDINGS OF THE AIR FORCE OFFICE OF SCIENTIFIC RESEARCH REVIEW, Dayton, Ohio, 1995, pp. 20.
- (3) Wang S, Lantz RC, Chen GJ, Breceda V, Rider ED, Hays AM, Parlaman G, Tollinger B, **Robledo RF**, Kunke K, Tinajero J, Witten ML: The prophylactic effects of U75412E-pretreatment in a smoke-induced lung injury model. PHARMACOLOGY & TOXICOLOGY, 1996, 79:231-237.

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- (7) Wang S, Lantz RC, Rider E, Chen GJ, Breceda V, Hays AM, **Robledo RF**, Tollinger BJ, Dinesh SVR, Witten ML: A free radical scavenger (Lazaroid U75412E) attenuates TNF-alpha generation in a rabbit model of smoke-induced lung injury. RESPIRATION, 1997, 64:358-363.
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- (10) Harris DT, Sakiestewa D, **Robledo RF**, Witten M: Short-term exposure to JP-8 jet fuel results in longterm immunotoxicity. TOXICOLOGY and INDUSTRIAL HEALTH, 1997, 13:559-570.
- (11) **Robledo RF**, Witten ML: [Sar⁹, Met (O₂)¹¹]-Substance P may protect against JP-8 jet fuel-induced lung injury via increased JP-8 lung clearance. PROCEEDINGS OF THE 1997 TACHYKININS IN HEALTH & DISEASE INTERNATIONAL CONFERENCE, Cairns, Australia, 1997, pp. 40.

- (12) Witten ML, Harris DT, **Robledo RF**, Srinivasan D: Aerosolized [Sar⁹, Met (O₂)¹¹]-Substance P causes immunostimulation in three different animal models. PROCEEDINGS OF THE 1997 TACHYKININS IN HEALTH & DISEASE INTERNATIONAL CONFERENCE, Cairns, Australia, 1997, pp. 19.
- (13) **Robledo RF**, Witten ML: Acute pulmonary response to inhaled JP-8 jet fuel. INHALATION TOXICOLOGY, 1998, 10:531-553.
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- (17) Wang S, Lantz RC, Chen GJ, Breceda V, Hays AM, **Robledo RF**, Witten ML: A 21-aminosteroid attenuates superoxide production of alveolar macrophages in the rescue mode after smoke-induced lung injury. TOXICOLOGIC PATHOLOGY (revision submitted).
- (18) Wang S, Lantz RC, Vermeulen M, Chen GJ, Breceda V, **Robledo RF**, Hays AM, Witten ML: A 21-aminosteroid attenuates smoke-induced chemical mediators in alveolar macrophages. IN VITRO TOXICOLOGY (submitted).
- (19) **Robledo RF**, Witten ML: Short-term pulmonary response to inhaled JP-8 jet fuel aerosol in mice. TOXICOLOGIC PATHOLOGY (revision submitted).

- (20) **Robledo RF**, Barber DS, Witten ML: Modulation of bronchial epithelial cell barrier function by *invitro* jet-propulsion fuel 8 exposure. TOXICOLOGICAL SCIENCES (submitted).
- (21) **Robledo RF**, Witten ML: NK1 receptor activation prevents hydrocarbon-induced lung injury in mice. AMERICAN JOURNAL OF PHYSIOLOGY: LUNG CELLULAR & MOLECULAR PHYSIOLOGY (revision submitted).

Abstracts

- (1) Hays AM, Tollinger BJ, Tinajero JP, **Robledo RF**, Lantz RC, Witten ML: Changes in lung permeability after chronic exposure to JP-8 jet fuel. THE FASEB JOURNAL, 1994, 8:A122.
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- (3) **Robledo RF**, Breceda V, Lantz RC, Wang S, Witten ML: Substance P antagonist, CP-96,345, potentiates JP-8 jet fuel induced lung injury in mice. THE TOXICOLOGIST, 1996, 30:98.
- (4) **Robledo RF**, Breceda V, Wang S, Lantz RC, Witten ML: Substance P receptor agonist ameliorates JP-8 jet fuel-induced lung injury. THE TOXICOLOGIST, 1997, 36:331.
- (5) **Robledo RF**, Barber DS, Witten ML: Decrease in human bronchial epithelial cell line barrier function by JP-8 jet fuel exposure. TOXICOLOGICAL SCIENCES, 1998, 42:398.