

Defense Health Program
 Fiscal Year (FY) 2012 Budget Estimates
 Exhibit R-2, DHP RDT&E Budget Item Justification

Appropriation/Budget Activity
 Defense Health Program/BA: 2

DATE: February 2011
 R1 Item Nomenclature: 4
 Medical Technology (AFRRI)
 0602787HP

COST: (Dollars in Millions)

	2010 Actual	2011 Estimate	2012 Estimate	2013 Estimate	2014 Estimate	2015 Estimate	2016 Estimate
Total PE 0602787	3.239	3.553	3.694	3.841	3.918	3.996	4.136
Biodosimetry (USUHS)	0.661	0.724	0.753	0.783	0.799	0.815	0.844
Internal Contamination (USUHS)	0.343	0.377	0.391	0.410	0.418	0.426	0.441
Radiation Countermeasures (USUHS)	2.235	2.452	2.550	2.648	2.701	2.755	2.851

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: For the Uniformed Services University of the Health Sciences (USUHS), Armed Forces Radiobiology Research Institute (AFRRI), this program supports developmental research to investigate new approaches that will lead to advancements in biomedical strategies for preventing, treating, assessing and predicting the health effects of human exposure to ionizing radiation. Program objectives focus on mitigating the health consequences from exposures to ionizing radiation that represent the highest probable threat to U.S. forces in current tactical, humanitarian and counter-terrorism mission environments. New protective and therapeutic strategies will broaden the military commander's options for operating within nuclear or radiological environments by minimizing both short-and long-term risks of adverse health consequences. Advances in assessment, prognostication, and therapy in case of actual or suspected radiation exposures will enhance triage, treatment decisions and risk assessment in operational settings.

B. PROGRAM CHANGE SUMMARY:

	2010	2011	2012	2013
FY12 Budget Estimate RDT&E	3.332	3.553	3.694	3.841
SBIR	-0.093	0.000	0.000	0.000
FY12 Budget Submission RDT&E	3.239	3.553	3.694	3.841

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PROGRAM CHANGE SUMMARY EXPLANATION:

FY 2010: SBIR Transfer from DHP RDT&E, PE 0602787 - Medical Technology (AFRRI) (-\$0.093 million) to DHP RDT&E, PE 0605502 - Small Business Innovation Research (SBIR) program (+\$0.093 million).

FY 2011: No Change.

FY 2012: No Change.

FY 2013: No Change.

C. **OTHER PROGRAM FUNDING SUMMARY:** None.

D. **ACQUISITION STRATEGY:** Not Required.

E. PERFORMANCE METRICS:

By FY 2011 - Screen a minimum of two promising new drugs and/or therapeutic approaches for radiation injury; elucidate mechanisms of radioprotection afforded by the tocol (Vitamin E) family of compounds; achieve characterization of the minipig as an effective large animal model for countermeasure studies; complete initial characterization of a high through-put method for DU biomarker evaluation in humans.

By FY 2012 - Screen a minimum of two additional promising new countermeasures; use newly purchased linear accelerator to open new areas of inquiry in partial body and organ-specific pathophysiology and countermeasure response; complete toxicological comparison of tocols to identify lead candidate; characterize levels of radiation biomarkers using a large cohort of healthy human adults to establish a multivariate biomarker baseline; develop at least one new candidate model/method for high throughput drug screening.

By FY 2013 - Complete elucidation of mechanisms of 17-DMAG as a countermeasure in radiation injury combined with trauma, burns, or hemorrhagic shock; complete tocol mechanistic studies focused on lead candidate; continue partial body and organ specific model development; continue refinement of identified new candidate drug screening model/method.