CCRP Product Development Support Services - Preclinical Efficacy Evaluation Resources: Sulfur Mustard Hematological Toxicity Model

Background

The goal of NIH Chemical Countermeasures Research Program (CCRP) centralized Product Development Support Services (PDSS) - Preclinical Efficacy Evaluation Resources (PEER) is to assist applicants with acquisition of pilot proof-of-principle efficacy data of candidate MCM(s) against the lethal and/or non-lethal effects of chemical threat agents in established or new models of chemical intoxication. PDSS resources are limited and not intended to sustain the entire spectrum of chemical MCM discovery, research, and development and should not be the sole source of support.

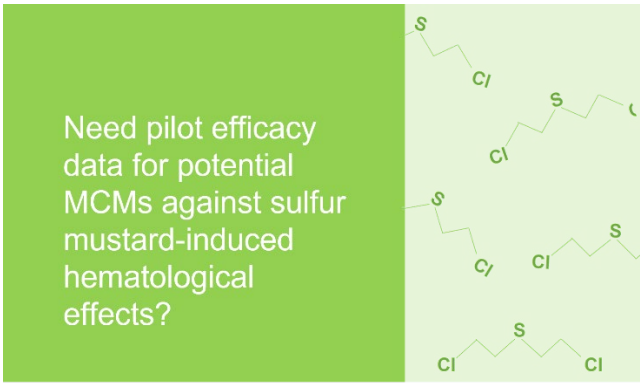
All information provided will be treated as confidential. Participants will retain custody of and have primary rights to the data developed, subject to Government rights of access consistent with current HHS, PHS, and NIH policies.

If approved, studies are performed at **no cost** to the applicant. Investigators seeking these services receive no funding from NIAID, but instead receive products or information generated by NIH-funded contractors on their behalf. NIH will deliver a final study report to the investigator at the end of the study.

PDSS Sulfur Mustard (SM) Hematological Toxicity

While exposure to SM is commonly associated with the production of vesicating dermal, ocular, and respiratory injuries, systemic damage to bone marrow and lymphatic tissue can decrease critical immune cell populations leading to higher susceptibility to life-threatening infection and septicemia. There are currently no approved MCMs for SM-induced myelosuppression.

The primary objective of this model is to evaluate the efficacy of candidate MCM to prevent and/or reverse hematological toxicity in a model challenged intra-venously (IV) with SM. Challenge with SM is performed IV to isolate the systemic hematological toxicity from the potentially confounding effects of dermal, ocular, and/or pulmonary injuries.



What We Offer -

The SM hematological toxicity model employs an *in vivo* approach where toxicity progression and MCM efficacy are monitored through survival, clinical observations, body weights, body temperatures, hematology using complete blood cell counts, blood culture for bacteremia determination, and histopathology.

The proposed pilot study will be limited in scope and aim to facilitate initial characterization of candidate MCM(s) efficacy. Preliminary evidence of therapeutic efficacy, i.e., biological response (preferably *in vivo*) against the actual threat agent OR an acceptable surrogate injury model is required.

To learn more, see "A Rodent Model of Sulfur Mustard Hematologic Toxicity for the Efficacy Evaluation of Candidate Medical Countermeasures" published in Military Medicine (DOI: 10.1093/milmed/usaa510)."

Applicant Eligibility Criteria

Utilization of PDSS resources is available to any domestic U.S.-based applicant with promising MCM candidates (and appropriate supporting preliminary data) responsive to the CCRP mission

Who to Contact

To learn more or request preparation instructions for a study pre-proposal, please contact **Dave Yeung, Ph.D.** (Deputy Director, CCRP); dy70v@nih.gov