

RLIP76-PL Shows Promise as an Effective Treatment for Nitrogen Mustard Exposure

Austin, Texas, November 1, 2012 — Terapio Corporation, a biopharmaceutical company developing the protein RLIP76 for clinical and defense applications, announced the successful results of a nonclinical efficacy study that tested Terapio's RLIP76-PL in an animal model for a surrogate of nitrogen mustard. Use of the pure chemical is regulated; therefore, a series of studies used a surrogate chemical in the same class – melphalan. Melphalan is an alkylating agent which is a common chemotherapeutic known to induce oxidative stress, just as nitrogen mustard. In these studies, animals were injected with melphalan and then administered RLIP76-PL, starting from 20 hours before melphalan exposure up to 20 hours afterward. In some cases, military use would allow for almost immediate administration after suspected exposure in the field. For other cases, logistical issues would cause a delay of treatment, so it would be important to understand that timeframe. A prophylactic treatment scenario would be for first responders and/or military personnel that may be required to operate in an area that could result in exposure.

When RLIP76-PL was administered as a pre-exposure prophylactic, in two separate studies, survival was 90% or 100% in animals that received a lethal dose of melphalan. If the first dose of RLIP76-PL was delayed until 12 hours after chemical exposure, the survival was still 40% compared to 0% in the controls, meeting established success criteria of improving survival by at least 30%. By administering multiple doses of RLIP76, survival was increased to 67%. Notably, when using the multi-dose regimen, and delaying the first dose until 20 hours post-exposure, survival in treated mice was 33% higher than controls. "We are excited about the results of these studies because the data provide a strong indication that RLIP76-PL would be efficacious against actual nitrogen mustard exposure," said Dr. Curt Bilby, President and CEO of Terapio.

About Terapio Corporation

Terapio is a biopharmaceutical company developing therapeutics based on the RLIP76 protein. Initial indications include developing the RLIP76 protein as a medical countermeasure for radiation exposure and chemical threats to civilian, military, and first responder populations faced with emergencies from terrorist acts or industrial accidents. Terapio is also developing the protein for central nervous system indications such as recovery from traumatic brain injury and stroke. The RLIP76 protein primarily works through the oxidative stress pathway and provides benefit as both a prophylactic and post-event treatment. Terapio's key innovation was the discovery that RLIP76 protein could be administered exogenously when encapsulated in liposomes and could reach many of the body's organs quickly, increasing cellular transport capacity in those organs, allowing them to better eliminate toxins associated with oxidative stress, a critical aspect of recovering from traumatic brain injury and stroke.

About Vesicant Agents (Sulfur and Nitrogen Mustards)

The mustards are alkylating agents in the vesicant category. A vesicating agent produces blisters when it comes in contact with human tissue. Sulfur mustard is well known as a

chemical warfare agent used in World War I and suspected use in more recent engagements. Nitrogen mustard was first synthesized in the 1930s and was later found to be useful for chemotherapy. Although this class of chemical agents has been studied for almost 75 years there is not yet an effective therapy available. One hypothesis is that reactions with glutathione ultimately result in oxidative stress which causes cell death and acute tissue injury.

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