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New Biosensor for Rapid Detection of Anthrax Lethal Toxin

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Beginning in August 2006, scientists from Russia and the United States have cooperated to develop a sensor or bioassay to detect the toxin produced by the anthrax pathogen. Their goal has been to develop a highly sensitive bioassay that could detect the “lethal factor” produced by the pathogen *Bacillus anthracis*. The design of the bioassay is based on the ability of the toxin to cleave specific amino acid sequences. Plans are to adapt it for use in a wide variety of environments and clinical settings. Since the start of the project, monoclonal antibodies to the toxin have been thoroughly characterized, and candidates suitable for use in a bioassay have been selected. The reproducibility of a protein fluorescence resonance energy transfer assay has also been validated. A solid-phase version of the coupled-amplified-lethal factor assay has shown good performance, and during the coming months a solution-phase lethal factor assay will also be optimized. In terms of implementation, the coupled-amplified-lethal factor assay has been transferred to an end-user where it is already employed in the development of high-throughput screening of protease inhibitors.

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