

SBIR 06.2 PHASE I - AWARD DETAILS	
ORGANIZATION	MPMC
TOPIC NUMBER	A06-166
CONTRACT NUMBER	
YEAR OF AWARD	
AWARD START DATE	
AWARD COMPLETION DATE	
PROPOSAL NUMBER	A062-166-0611
TITLE	Rapid and Early Detection of Prions
PROJECT MANAGER	Jeff Blair (405) 742-6867 jeff.blair@okstate.edu
COMPANY	DNA Solutions, Inc. 840 Research Parkway Suite 551 Oklahoma City OK 73104 Minority Owned: No Veteran Owned: No Number of Employees: 8
KEYWORDS	Cell culture, prion, chronic wasting disease, diagnostic, bioassay, TERT, transmissible spongiform encephalopathy
ABSTRACT	Transmissible spongiform encephalopathies (TSEs), or prion diseases, are caused by a unique transmissible agent hypothesized to be a misfolded form (PrPD) of a normal host protein (PrPC). We will use chronic wasting disease (CWD) as a model prion agent because there is an urgent need for increased research on this agent, our company is positioned to capitalize on an existing customer base, and CWD has significant biosafety advantages compared to other prion agents. The objectives of this proposal are to 1) establish a library of cervid cell culture lines and 2) demonstrate prion replication in one or more of these lines. We will accomplish these objectives by utilizing a strategy of selecting cell lines based solely upon their ability to support prion replication quickly and sensitively. This assay will be used for antemortem diagnosis of prion disease as well as a detection method for prion contamination in blood, food, pharmaceutical supplies, and the environment. The development of a sensitive cell-based bioassay for CWD will be a substantial commercial product. More significantly, the method demonstrated in this proposal will be quickly adapted for use with other prion agents and will drastically broaden the potential market for such an assay.
BENEFITS	Successful completion of the proposed research will result in a cervid (white-tailed deer, mule deer, and/or elk) cell line that can propagate CWD prions at a level detectable by standard Western Blotting. This cell line will then be subcloned and selected for rapid, high level propagation of CWD prions in Phase II. The method described in this proposal will also be amenable to rapid application to other prion agents such as Bovine Spongiform Encephalopathy (BSE) or variant Creutzfeldt-Jakob Disease (vCJD) that require much more

	stringent biosafety precautions.
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