IDENTIFYING MICROSATELLITE MARKERS IN THE GENOME OF THE ENDEMIC ANTIGUAN GROUND LIZARD, AMEIVA GRISWOLDI

Nathan T. Stephens, Brian E. Smith and Cynthia Anderson  
Department of Biology  
Black Hills State University  
Spearfish, SD

Paul Colbert  
Department of Ecology, Evolution, and Organismal Biology  
Iowa State University  
Ames, IA

ABSTRACT

The Antiguan ground lizard, Ameiva griswoldi, is found only on the islands of Antigua and Barbuda as well as many associated offshore islands. Populations of A. griswoldi have been fragmented on Antigua and occur at extremely high densities on some islands around Antigua. It is currently unknown how isolation and population density may affect the population genetics of A. Griswoldi. Our work focused on the development of a small fragment genomic library enhanced for microsatellites, a valuable tool for the study of population genetics. The purpose of this research was to locate several polymorphic base repeats or microsatellites in the genome of A. griswoldi. Genomic DNA was isolated from the tissues of A. griswoldi using the PCR-based isolation of microsatellite arrays (PIMA) method to screen samples for base repeats. We found that the PIMA method was effective in locating several repeat areas that may be useful as microsatellite markers. DNA samples that showed positive results for base repeats were then sequenced to identify microsatellite arrays.