Breeding clouded leopards *ex-situ* has been a challenge, primarily due to extreme male aggression toward females, often during breeding introductions. Previous research has identified two mechanisms that may underlie clouded leopard aggression: anxiety and high circulating testosterone levels. With a grant from the AZA’s Conservation Endowment Fund (CEF), three studies were conducted to characterize and control aggression in male clouded leopards to aid in the formation of breeding pairs.

Initially, sixteen adult male clouded leopards were categorized as anxious or calm using a keeper questionnaire and fecal endocrine (testosterone and cortisol) profiles; these measures were correlated with behavior indices before, during, and after a series of behavioral reaction tests aimed at assessing an individual’s stress-response. Next, the behavioral and endocrine responses to the tests were re-measured in the clouded leopards following three treatments: 1) an anxiety-reducing tricyclic antidepressant (clomipramine); 2) a testosterone suppressing gonadotropin releasing hormone agonist (deslorelin), or 3) no treatment. Finally, the long-term effects of the drug treatments on reproductive function were assessed in both clouded leopards and domestic cats, a model for non-domestic feline reproduction. Studies revealed important findings about the basis of aggressive behavior in male clouded leopards.

First, two behavioral reaction tests – ‘mirror image stimulation’ and ‘exposure to unfamiliar people’ – were effective tools for evaluating temperament and eliciting an aggressive response (e.g. growling and tail flicking). Such simple tests may be useful as a general test of anxiety and aggression to aid in daily management decisions. Second, treatment with both clomipramine and deslorelin reduced anxious and aggressive behaviors in male clouded leopards. Clomipramine was associated with a decrease in anxious (e.g. decreased hiding and increased time spent lying down) and aggressive behaviors. Meanwhile, deslorelin treatment led to a decrease in both testosterone and cortisol concentrations, and also a decrease in aggressive behaviors. Finally, reproductive function was partially suppressed by deslorelin treatment in the clouded leopard and was fully suppressed in the domestic cat, for an average of $25.2 \pm 17$ days. Clomipramine treatment had no negative impact on male reproductive function, and as such may be a useful tool to aid in the formation of clouded leopard breeding pairs.

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