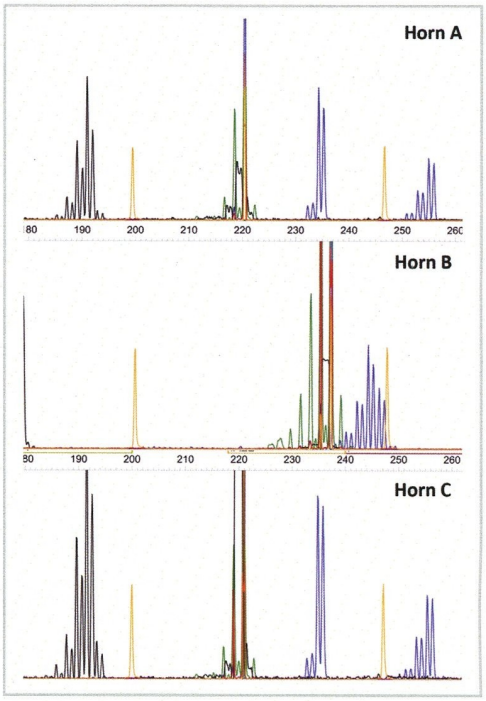
Whose Horn is It Anyway?

So, you are given a box of rhino horns for mineral analysis, but all the identification labels have come off, *What do you do next*? A similar scenario recently happened at CREW. To answer that question, CREW scientists took on the role of forensic DNA detectives (much like you see on one of the CSI TV shows). With less than a smidgen of horn, CREW researchers isolate DNA and create a rhino's profile by sequencing the DNA at 23 different loci known to differ among rhinos. By partnering with the Cincinnati Museum Center's John A. and Judy Ruthven DNA lab, CREW can generate the DNA profiles quickly (days instead of weeks of time to get the data). Then the scientists play a very advanced game of matching with the assistance of computers, lining up the different DNA profiles. Not only do they identify the species and gender of the individual a horn sample came from; they can determine which horns came from the same individual (note: black and white rhinos have two horns). This can be very challenging if the horns came from related rhinos because siblings share half their DNA. These CSI tools that CREW staff has employed for its work are not just part of your favorite crime show, these are the same tools used to catch and prosecute rhino horn poachers in Africa and are very similar to the process used for ancestry testing.



Got Milk?

It is common knowledge (and common sense) that a female rhino's udder is expected to enlarge and produce milk near the time of parturition, so her newborn calf has a warm, nutritious meal waiting for it as soon as he/she is born. But what happens when a female starts to produce milk mid-way through a pregnancy? You get very concerned caretakers and very intrigued scientists. For years, CREW has been studying hormones that control animal reproductive function including estrogens, progesterone, testosterone, and several more. However, one hormone that has received little attention in the CREW endocrine lab or rhino community is prolactin – the hormone associated with lactation. Recently, CREW was involved with two mid-pregnancy lactation cases in white rhinos which provided a great opportunity to expand our hormone and reproductive knowledge. As a part of AIRS, and to investigate the mid-gestation lactation described above, we began a quest to identify a prolactin assay developed for other species that would work for rhinos. As with most new scientific endeavors, it took several tries before we succeeded, but we are pleased to report that we have found an assay that is a good fit for our needs. Although we currently have more questions than answers about the strange mid-gestation lactation phenomenon in a few rhinos, we are hopeful this new rhino prolactin assay will be the key to understanding it. Furthermore, it may shed some light on rhino reproductive dysfunction which is an important goal of AIRS.



Credit: The Wilds