

Forensic DNA Amplification and Analysis

Thermalcycler and the ABI 3500xl



Amplification and Genetic Analysis

Bode has validated processes to perform DNA analysis using GeneMapper ID-X v1.4 or v1.5.

DNA Analysis Technologies

Bode is one of very few laboratories worldwide to offer:

Technology	Application
STR	Traditional DNA testing used in most forensic analyses. STR profiles are often entered into CODIS and can be generated from a small amount of sample. STRs are highly variable and can yield extremely high match statistics.
Y-STR	DNA analysis that targets the Y-chromosome, which is only found in males. Y-STR data can track paternal lineage and help resolve the male component of a male/female mixture without amplifying the female DNA.
Mini-STR	DNA analysis that targets loci to help recover information from degraded DNA that otherwise may produce limited or partial DNA profiles. Mini-STRs can help with these challenging samples.
mtDNA	DNA analysis targeting mitochondrial DNA, which is passed down from the maternal line. mtDNA is an excellent method for old/degraded samples, hairs and fingernails and useful in missing persons cases as it can help link maternal relatives.

Coming soon! – InnoGenomics InnoTyper 21 for small amplicon testing as well as validation of Data Collection 4.0 and GeneMapper ID-X v1.6!

Amplification Technologies

Bode can provide DNA testing using most commercially available chemistries on the ABI 3500xl.

STR

- Globalfiler
- PowerPlex Fusion 6C
- PowerPlex Fusion
- Investigator 24plex QS
- Minifiler

Y-STR

- PowerPlex Y23
- Yfiler
- Yfiler Plus

mtDNA Experience Using Sanger Sequencing

Bode has extensive experience analyzing casework samples for mitochondrial DNA since 1998. Bode has different primer set options validated for mitochondrial testing. Extracts may be PCR amplified within the mtDNA control region using:

- Short primer sets (200-400 base pairs)
- Hypervariable region primers (400 base pairs); or
- Control region primers (1100 base pairs) on the ABI 9700 PCR thermal cycler.

Cycle sequencing products are then be run on the ABI 3130xl or 3500xl Genetic Analyzer and mtDNA sequence data is generated for the control region, including HVI and HVII.

Applying our Technologies

Bode has brought forensic technologies online to support forensic DNA testing. Bode can apply these technologies to most of our service offerings including:

- [Sexual Assault Kit Testing](#)
- [Property Crime Testing](#)
- [Individual/Custom Casework](#)
- [Databasing](#)
- [Post-Conviction Testing](#)
- [Missing Persons/Unidentified Remains](#)



ABI 9700 Thermal Cycler and ABI 3500xl Genetic Analyzer