

AUTOMATION IN GBA ANALYSIS

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Genetic Bit Analysis (GBA) is a method of determining single nucleotide polymorphisms (SNP's) using single nucleotide extension reactions at the site of each polymorphism. GBA is very adaptable to 96 well microtiter plate format and thus to a great number of different liquid handling robots. Following DNA extraction, the PCR reactions can be set up using a Tecan Genesis. The post-PCR chemistry and analysis can be entirely automated using a Hewlett-Packard ORCA arm to integrate multiple devices, all of which are directed by a single PC. This unit includes two Carl Creative Systems' plate washers, another Genesis, a plate carousel, a Tomtec Quadra 96 dispenser, a plate shaker table, and an SLT Spectra ELISA reader. Bar code readers are employed on both the pre-PCR and post-PCR devices to monitor specimen identity. The ELISA results are fed into a computer program to assign alleles to the tested specimens, perform quality control functions, and release the run.