RAPID DNA ANALYSIS OF A WIDE RANGE OF SAMPLES TYPES BASED ON INTERROGATION OF 27 STR LOCI

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NetBio has previously developed a fully integrated Rapid DNA Analysis system based on 27 locus FlexPlex chemistry. This 6-color assay is modeled after Promega's Fusion 6C chemistry, with the addition of two additional Y-STR loci (DYS570 and DYS576) and the substitution of Penta D with D6S1043. The assay contains all expanded CODIS, UK, Interpol, European Standard, German and Australian core loci, and D6S1043, an important STR marker broadly used in China. Accuracy, concordance, precision, resolution, PHR, sensitivity, species specificity, and all other relevant measures meet or exceed required metrics.

The FlexPlex assay has been incorporated into a single use BioChipSet consumable with a six-month shelf-life at room temperature and a variety of features to enhance ease-of-use by non-technical personnel and mass fatality first responders. Two consumables have been developed, one designed primarily for analysis of buccal swab samples and the other for casework samples (e.g. water bottles and coffee lids, chewing gum, hair, tapelifts, semen, and blood spatter stains) and sample types readily obtained in mass fatality/disaster victim and missing person identification (e.g. blood, tissue fragments, and bone). Here, we focus on casework and disaster victim identification samples.

Following sample loading into the BioChipSet, the automated run requires approximately 100 minutes for sample processing and data analysis by the onboard Expert System. Taken together, the data demonstrates that the FlexPlex Rapid DNA system is effective for the generation of STR profiles from a wide range of sample types and input DNA quantities.