

DDC PLEX: THE USE OF ADDITIONAL STR LOCI FOR SOLVING DIFFICULT PARENTAGE AND SIBSHIP TESTS

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Currently, DNA analysis of short tandem repeat (STR) polymorphisms is the most commonly used method for paternity and other familial relationship testing. Due to the relatively low discriminating power of individual STR loci, multiple loci must be examined to resolve disputed relationships. We routinely use Applied Biosystem's (Foster City, CA) Identifiler® kit for relationship testing and find the 15 loci (plus amelogenin) multiplexed in the kit useful for solving the majority of tests, but a small proportion of tests require additional testing for resolution.

We have employed a set of secondary multiplexes (DDC Plex I & II) for use in conjunction with Identifiler® to help resolve sibships and paternity tests involving only one parent, related alleged fathers, or mutational events. The multiplexes include STR markers for Penta B, Penta C, Penta D, Penta E, F13A1, F13B, FES/FPS, LPL, SE33, D18S51, D21S11, TPOX, and vWA. Loci found in the Identifiler® kit are included as crosschecks to help ensure samples are from the correct individuals.

Here we present examples where DDC Plex has proven useful in resolving paternity tests with low combined paternity indices due to having only one parent or a single exclusion as well as paternity tests with two related alleged fathers where neither can be excluded using Identifiler® alone. Also presented are sibship tests where additional loci help resolve the relationships.