

Resolving questioned paternity issues using a Philippine genetic database

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Science Diliman. 2002, 14(1):8-16. The utility of the Philippine genetic database consisting of seven Short Tandem Repeat (STR) markers for testing of ten questioned paternity cases was investigated. The markers used were HUMvWA, HUMTH01, HUMCSF1PO, HUMFOLP23, D8S306, HUMFES/FPS and HUMF13A01 with a combined Power of Paternity Exclusion of 99.17%. Due to the gravity of some cases handled in the laboratory, routine procedures must be assessed to determine the capacity of the analysis to exclude a non-father or predict paternity. Clients showed a preference for only testing father and child to lower costs and reduce conflicts, particularly when the mother objects to the conduct of DNA tests or when she is deceased or cannot be located. The Probability of Paternity was calculated with and without the mother's profile in each of the cases. In all instances, results were more informative when the mother's DNA profile was included. Moreover, variations in the allelic distribution of five STR markers among eight Caucasian, one African-American, and two Amerindian (Argentina) populations resulted in significant differences in Probability of Paternity estimates compared to those calculated using the Philippine database.

Based on the results of the present study, it is recommended that tests on alleged father-child samples be performed to screen for at least two mismatches. In the absence of these mismatches, further analysis that includes the mother's DNA profile is recommended. Moreover, it is recommended that a Philippine genetic database be used for DNA-based paternity testing in the Philippines.

KEYWORDS

Philippine genetic database, short tandem repeat, motherless, paternity trio