

COMPLEX RELATIONSHIP TESTING CASES SOLVED UTILIZING STR CHROMOSOME X MARKERS

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Introduction: Sexual Chromosome X markers of paternal inheritance indicate with certainty, if we can exclude a complex paternal relationship, in which an inconclusive result is obtained when only autosomal markers are used. For example: Half Siblingship between 2 females. The absence of paternal relatives results in the demonstration of common biological origins impossible, even when we use 25 STRs (Short Tandem Repeat) for Autosomal DNA.

Objective: Demonstrate our capacity to resolve complex inconclusive cases using chromosome X STRs.

Methodology: Investigator[®] Argus X-12 kit with 12 markers, constitutes an excellent, powerful, discriminatory tool which is complementary in cases where we face deficiency in the interpretation of the relationship. The Argus X-12 System was verified internally and its use approved by ISO 17025 and aaBB assessors, the international standards of quality control that rule our laboratory.

Result: In three families with paternity dispute, the X haplotipo, with direct transmission from fathers to daughters, was the deciding factor. The Total Combined Relationship Testing Index (Combined Autosomal Index by the X Haplotype Index) and the Total Relationship Testing Probability, established with certainty, that the persons involved in the Relationship Tests, were in fact related biologically or not as paternal half siblings.

Conclusions: We managed to use a tool for the first time, in our country, in our laboratory, REFERENCIA Laboratorio Clínico, Dpto. de Filiación, that is capable of answering the questions about Complex Relationships correctly, questions that for years were unsolved.

Keywords: Complex Relationship Testing Cases, Chromosome X, STR, Investigator[®] Argus X-12.