Detection of Fragile X Mental Retardation-1 Gene Product by Hair Root Analysis

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Fragile X syndrome is one of an increasing number of neurogenetic disorders, and effects 1:4000 in male and 1:6000 in female. This syndrome is characterised by a CGG-repeat expansion within the FMR-1 gene, and it disturbs the expression of fragile X mental retardation protein (FMRP). Usually, to detect this syndrome, DNA diagnostic method such as Southern blotting and PCR amplication have been used. However, these methods need long time and show a lot of false results. In order to solve this problem, we developed a rapid detection method of FMRP by using hair root. The principle of this method is to use anti-FMRP antibody-antigen reaction with alkaline phosphatase. The merits of this diagnostic system with hair root are compared with the DNA test. This system can be used for fast diagnosis, and it does not require the collection of blood sample.

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