

عنوان مقاله:

Early Non-invasive Determination of Fetal Sex Using Cell-free DNA

محل انتشار:

مجله سلول و تحقیقات مولکولی، دوره 8، شماره 2 (سال: 1395)

تعداد صفحات اصل مقاله: 5

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خلاصه مقاله:

The first step in the prenatal diagnosis of X-linked genetic disorders is determining fetus gender. Current invasive methods to obtain the DNA source of the fetus instead of its miscarriage risk, has harmful stress for high risk pregnancies. Cell free fetal DNA (cffDNA) circulating in the maternal blood, has now become a useful source of noninvasive prenatal diagnosis. Considering limitation of cffDNA; as its small fragment size and low concentration in maternal plasma; using this source for clinical diagnostic material, requires a high efficiency extraction method and reasonable molecular tests to lead more accurate results. In the current study, we optimized Triton/Heat/Phenol (THP) protocol for extracting cffDNA in 8 and 12 weeks gestation. Fetal sex determined for prenatal diagnosis of hemophilia using SRY gene markers and high resolution markers of sex chromosomes by QF-PCR. The results compared with genetic tests on CVS samples. We confirmed the persistence of fetal DNA in maternal blood and investigated cell-free fetal DNA as a reliable approach in prenatal diagnosis of hemophilia. High accuracy and possibility of analyzing circulating fetal DNA in maternal blood highlights this method as a reliable one to early noninvasive determination of fetal sex to avoiding problems of invasive methods

کلمات کلیدی:

Fetal DNA, Hemophilia, SRY gene, Prenatal diagnosis

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