

Title (en)
ENRICHMENT OF FETAL CELLS FROM MATERNAL BLOOD

Title (de)
ANREICHERUNG VON FÖTALEN ZELLEN AUS MATERNALEM BLUT

Title (fr)
ENRICHISSEMENT DE CELLULES FÉTALES, À PARTIR DU SANG MATERNEL

Publication
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Application
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Priority
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Abstract (en)
[origin: WO9609409A1] Methods of preparing fetal cells from samples of maternal peripheral blood are provided. A suspension of mononuclear cells is prepared from a maternal blood sample. Maternal cells are then depleted from the sample by adding magnetically coupled antibodies specific for markers present on adult cells, followed by binding the cells to a column in the presence of a magnetic field. From the depleted fraction, fetal erythrocytes are enriched by magnetic cell sorting (MACS). These nucleated erythrocytes are then used as a source of fetal genetic material, which is analyzed for the presence of chromosomal or genetic abnormalities, or for the presence of a Y chromosome, by conventional methods such as probes for in situ hybridization, metaphase spreads, and polymerase chain reaction (PCR).

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C12Q 1/68; G01N 33/569

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Citation (search report)
• [Y] WO 9116452 A1 19911031 - CELLPRO INC [US]
• [X] BÜSCH J ET AL.: "Simple and fast 'Double-MACS' sorting of fetal erythroblasts from maternal blood for PCR-based paternity analysis", ANNALS OF THE NEW YORK ACADEMY OF SCIENCES, vol. 731, 1994, pages 144 - 146, XP001011400
• [DX] GÄNSHIRT-AHLERT D ET AL.: "Magnetic cell sorting and the transferrin receptor as potential means of prenatal diagnosis from maternal blood", AMERICAN JOURNAL OF OBSTETRICS AND GYNECOLOGY, vol. 166, May 1992 (1992-05-01), pages 1350 - 1355, XP001011368
• [DY] MILTENYI S ET AL.: "HIGH GRADIENT MAGNETIC CELL SEPERATION WITH MACS", CYTOMETRY, ALAN LISS, NEW YORK, US, vol. 11, no. 11, 1990, pages 231 - 238, XP000999711, ISSN: 0196-4763
• [DA] CHUEH J AND GOLBUS M S: "Prenatal diagnosis using fetal cells in the maternal circulation", SEMINARS IN PERINATOLOGY, vol. 14, no. 6, 1990, pages 471 - 482, XP001011366
• [A] HOLZGREVE W ET AL.: "Noninvasive prenatal diagnosis", ANNALS OF THE NEW YORK ACADEMY OF SCIENCES, vol. 731, 1994, pages 253 - 256, XP001011401
• [PX] READING J P ET AL.: "Nucleated erythrocytes in maternal blood: quantity and quality of fetal cells in enriched populations", HUMAN REPRODUCTION, vol. 10, no. 9, September 1995 (1995-09-01), pages 2510 - 2515, XP001011367
• See references of WO 9609409A1

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