

1 15. The method of claim 13, wherein the scalar is assumed to be about 2
2 for a filtered informative maternal locus.

1 16. The method of claim 13, wherein the sample of the pregnant woman is
2 a sample of blood plasma.

1 17. The method of claim 13, wherein the analysis of RNA molecules
2 obtained from the sample comprises sequencing the RNA molecules or cDNA copies thereof.

1 18. The method of claim 13, wherein the analysis of RNA molecules
2 obtained from the sample comprises performing digital PCR.

1 19. The method of claim 13, wherein identifying locations of the reads in a
2 reference sequence comprises aligning the reads to the reference sequence.

1 20. The method of claim 13, wherein the first predetermined number of
2 reads for the one or more filtered informative maternal loci is 1, and wherein the second
3 predetermined number of reads for the one or more filtered informative maternal loci is 1.

1 21. The method of claim 13, further comprising sequencing genomic DNA
2 obtained from maternal tissue to determine a genotype of the pregnant female subject at each
3 informative maternal locus.

1 22. The method of claim 13, further comprising sequencing genomic DNA
2 obtained from the placenta, chorionic villi, amniotic fluid, or maternal plasma to determine a
3 genotype of the fetus at each informative maternal locus.

1 23. The method of claim 13, further comprising:
2 identifying one or more informative fetal loci, each of which is homozygous in
3 the pregnant female subject for a corresponding first allele and which is heterozygous in the
4 fetus for the corresponding first allele and a corresponding second allele;

5 filtering the one or more informative fetal loci to identify one or more filtered
6 informative fetal loci:

7 that are located within an expressed region of the reference sequence,
8 at which at least a first predetermined number of reads in the plurality of
9 reads containing the corresponding first allele are located, and

1 15. The method of claim 13, wherein the scalar is assumed to be about 2
2 for a filtered informative maternal locus.

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2 a sample of blood plasma.

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3 predetermined number of reads for the one or more filtered informative maternal loci is 1.

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3 informative maternal locus.

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3 genotype of the fetus at each informative maternal locus.

1 23. The method of claim 13, further comprising:
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3 the pregnant female subject for a corresponding first allele and which is heterozygous in the
4 fetus for the corresponding first allele and a corresponding second allele;

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6 informative fetal loci:

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