

Applications

- Identify women at risk for premature delivery
- Reduce the number of preterm births

Advantages

- One of the first genetic markers for preterm pregnancy
- Greatly reduce the number of premature births
- Potential to alleviate 7.8 billion dollars in health care expenses

Inventors

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Market Need

Preterm birth is the leading cause of perinatal morbidity and mortality in developed countries. Premies that survive are at increased risk of neurodevelopmental impairments and respiratory and gastrointestinal complications. Approximately 30% of all premature births in the U.S. are caused by spontaneous rupture of the amniotic sac at less than 37 weeks' gestation (known as PPROM). PPROM is more common in African-American women, occurring 2- to 3-fold more than in European women. Premature infants experience significant complications, including respiratory distress, neonatal sepsis, umbilical cord prolapse, placental abruption, and death. Treatment of premature infants due to PPROM in the U.S. costs approximately 7.8 billion dollars a year. If diagnosed early, however, the pregnancy can be appropriately managed, greatly reducing the risk of preterm delivery.

Technology Summary

Researchers at VCU have identified a polymorphism in a particular gene (SERPINH1), which confers risk of premature delivery. This polymorphism was shown to have a significant frequency (12%) in African American women that experienced premature delivery. A screen of parental DNA for this polymorphism will identify the patients at risk, allowing physicians to provide these patients the appropriate prenatal treatments. This could greatly reduce the number of premature births, alleviating 7.8 billion dollars in health care expenses.

Technology Status

U.S. Patent pending: 7,807,366.

Wang et al. Hum Mutat. 2008 Feb;29(2):332.

This technology is available for licensing to industry for further development and commercialization.