Docket #: S19-394

Using pregnancy urine samples and untargeted metabolomics profiling for gestational age prediction

Stanford scientists have invented a method that can determine the gestational age of a fetus by testing the mother's urine using metabolomics profiling and machine learning.

Knowing the age of the fetus is fundamental to tracking the progress of a pregnancy, including both maternal and fetal health. However, methods like using the time from last menstruation can be inaccurate while ultrasound methods require the patient be examined by a trained medical professional to assess gestational age. A technique to determine the gestational age that is both accurate and easy would be a valuable option for many patients.

With this invention, Stanford scientists have developed a new paradigm in gestational age prediction. Using cutting-edge metabolomics profiling and machine learning to analyze samples from 339 normal pregnant women in Denmark, they have developed a method to determine gestational age from an untargeted metabolomic profile of the mother's urine. This new approach provides a non-invasive and effective method for precisely determining gestational age from a broad metabolomic profiling of the mother's urine.

Applications

- Using the mother's urine to determine the gestational age of the fetus

Advantages

- **Cutting-edge Technique**: Uses the broad range of metabolomic information available in the mother's urine to determine gestational age with machine learning methodology
- **Easy Patient Sample Collection**: Urine test makes sample collection safe & painless for patient and enables potential for a home test kit
- **No Sonography Required**: Sample can be collected and gestational age determined without the requirement for an ultrasound examination

Patents

- Published Application: WO2022099319
- Published Application: 20230298758

Innovators

- Liang Liang
- Michael Snyder
- Mads Melbye
- Songjie Chen
- Xiaotao Shen
- Larry Rand
- Laura Jelliffe

Licensing Contact

Hyunjin Kim

Licensing Manager, Life Sciences

Email