



Method and kit for early detection of preeclampsia

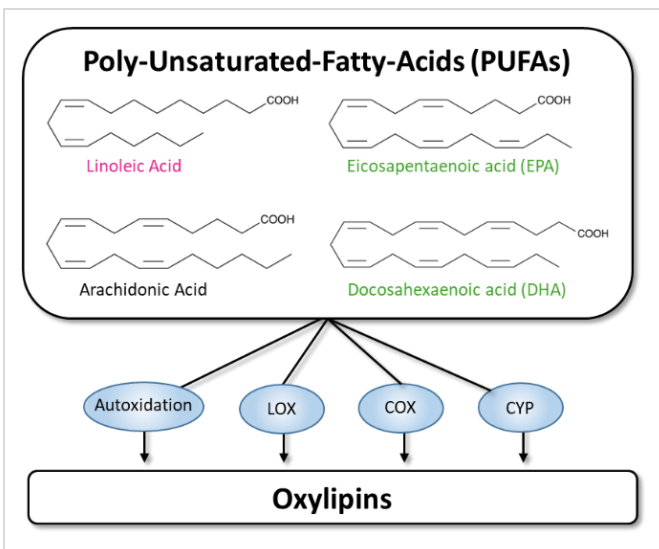
Keywords: Preeclampsia, Pregnancy, Mass Spectrometry, In-vitro Diagnostics, Markers

INVENTION NOVELTY

The specific marker combinations provide an *in-vitro* diagnostic test system (IVD) to predict the probability of the future presence or non-presence of preeclampsia at early time points in pregnancy. The metabolite-based assay can be performed on blood samples, taken before gestational week 16 and is based on mass spectrometry. The test gives a prediction at a time point in pregnancy, where a prophylactic treatment is still possible. Current standard IVD parameters (like sFlt1/PLGF ratio) are solely predictable a week before clinical symptoms like hypertension and proteinuria appear. Due to the early and reliable detection of an increased likelihood to develop preeclampsia, high risk pregnancies can be identified and preventive therapies to counteract disease development can be initiated.

VALUE PROPOSITION

About 5 – 10% of pregnancies develop an early or late-onset preeclampsia which still is the major cause for fetal and maternal morbidity and mortality. Based on the high incidence values, a standard approach to screen for early marker combinations which enables physicians to establish prevention and therapy plans is of high interest. The protected technology comprises a set of specific markers whose blood plasma levels can be determined using mass spectrometry including the corresponding methods. Furthermore, a kit with natural or modified core metabolites as mass spectrometry standards is provided to develop an *in-vitro* diagnostic product for routine application.



TECHNOLOGY DESCRIPTION

Certain lipids, namely eicosanoids, which are derived from the polyunsaturated arachidonic acids (AA), linoleic acid (LA), or eicosapentaenoic- and docosahexaenoic acid (EPA/DHA) exert complex control over several communication pathways in the human body and can be used as early prognostic markers to predict the development of preeclampsia. The 5 core metabolites show a reliable prognostic potential which can be further increased by implementing additional marker molecules and clinical parameters. The marker compositions were identified comparing early taken patient blood samples from woman with uncomplicated pregnancies and from subjects developing preeclampsia in later stages of pregnancy.

COMMERCIAL OPPORTUNITY

In-licensing or collaboration for further development is possible.

DEVELOPMENT STATUS

Initial proof-of-concept studies have been performed at Max-Delbrück-Center Berlin.

PATENT SITUATION

International patent application WO 2022/223542 A1 with a priority of April 2021 was nationalized in US, CA and JP and regionalized in EU. Applications are pending.

FURTHER READING

No publication yet. Please contact us directly.

