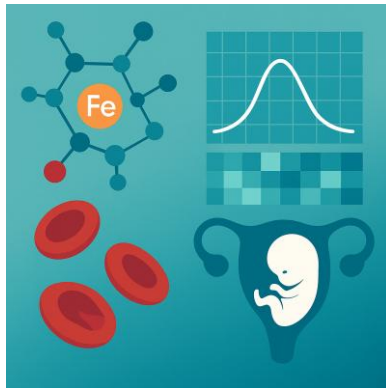


Technology offer IP-051

Method for diagnosing iron-deficient states in non-anemic pregnant women

New diagnostic method to identify the risk of developing iron-deficient states in non-anemic pregnant individuals during the second trimester. The system optimizes clinical classification through the early detection of alterations in iron metabolism, enabling more effective prevention and treatment of gestational iron deficiency.



State of development

TRL-5 Late preclinic

Industrial Property

Spanish patent application

Priority date: 14/4/2025

Objective of the collaboration

License and/or co-development

Contact

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Market needs

Anemia affects one third of the global population, and its prevalence increases during pregnancy, where it can compromise both maternal health and fetal development. Iron is essential for erythropoiesis, and its deficiency, even in the absence of anemia, alters its availability to erythroid precursors, leading to iron-restricted erythropoiesis. Current tools to diagnose these conditions are limited and not very accurate in pregnant women, making early detection difficult. Therefore, there is an urgent need for more sensitive and specific diagnostic methods to effectively prevent and treat iron-deficient states during pregnancy.



Technical solution from IMIB

The solution consists of a multivariate diagnostic algorithm that integrates advanced hematimetric parameters to enable early detection of iron deficiency and classify it as absolute or functional in non-anemic pregnant women during the second trimester, with or without iron restriction. *In silico* tests have validated the model's ability to accurately identify iron-deficient states before the onset of anemia. *In vivo* models have shown that the use of the algorithm improves detection and allows for early intervention, reducing progression to iron-deficiency anemia.

Benefits

- Innovative probabilistic model that predicts, with high specificity, the risk of iron deficiency and anemia subtypes in non-anemic pregnant women, improving early detection compared to current methods.
- It enables differentiation between functional and absolute iron deficiency, facilitating personalized treatments according to the type of alteration in iron metabolism.
- It enhances clinical efficiency and reduces costs associated with incorrect or delayed treatments, optimizing healthcare resources in the management of gestational anemia.