



**GENOMICA**  
Next Generation Genetics

# The first non-invasive test to assess endometrial receptivity

*Identify the window of implantation  
with a simple blood draw*



# ENDORECEPT

**Blood**

[www.endorecept.it](http://www.endorecept.it)

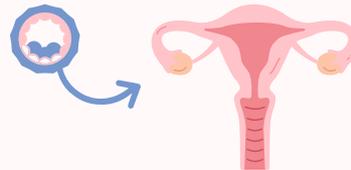


# ENDORECEPT Blood

## ENDOMETRIUM AND WINDOW OF IMPLANTATION

A significant number of women undergoing assisted reproduction technologies (ART) do not achieve pregnancy despite the transfer of morphologically high-quality embryos. In many cases, implantation failure may be due to a **lack of synchronization** between the embryo and the endometrium, particularly when the embryo is transferred into a uterus that is **not yet receptive**—i.e., at a time when the endometrium is not physiologically prepared to accept it.

Accurately identifying the optimal day for embryo transfer is therefore a crucial determinant of treatment success. This day must fall within a specific time interval known as the “**window of implantation**”, during which the endometrium reaches a **receptive** state that supports embryo adhesion and implantation.



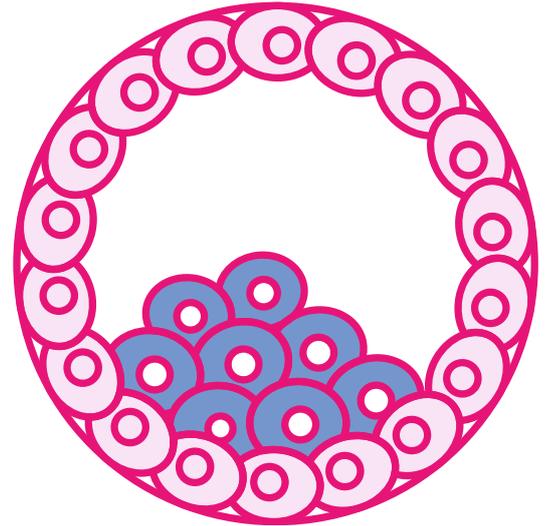


# ENDORECEPT Blood

In most women, the window of implantation occurs within a predictable timeframe; however, in a substantial proportion of patients it may be **advanced** or **delayed** compared with expected timing. In such circumstances, embryo transfer may take place when the endometrium is **non-receptive**, resulting in **implantation failure**.

This asynchrony between an implantation-ready embryo and the endometrial receptivity window is considered one of the most frequent causes of **recurrent implantation failure** (RIF) in ART cycles.

In women with a clinical history of RIF, the window of implantation may be **shifted**; therefore, precisely identifying the individual timing of endometrial receptivity becomes essential in order to plan a **personalized Embryo Transfer, pET**.



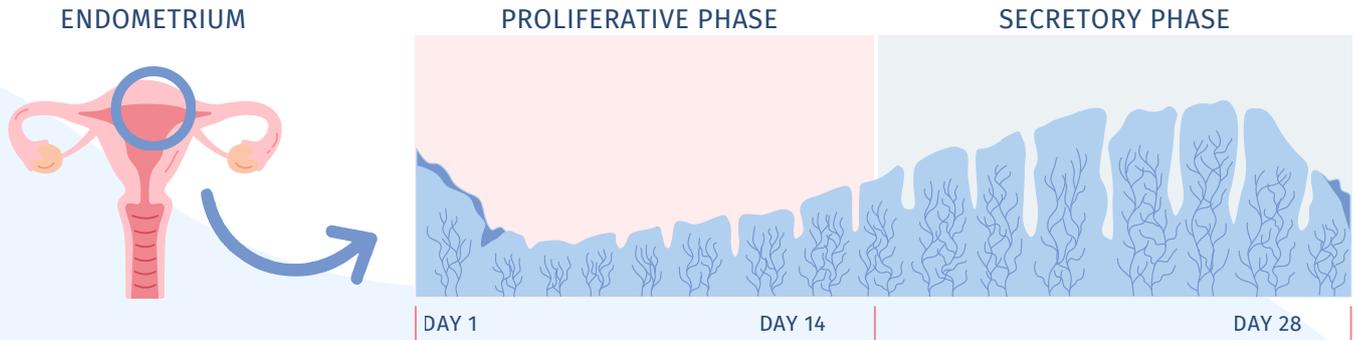
In some patients, the window of implantation may be **advanced** or **delayed**. It is therefore important to personalize the timing of embryo transfer.



# ENDORECEPT Blood

## GOAL: SYNCHRONIZE THE EMBRYO AND THE ENDOMETRIUM

Endometrial factors play a key role in embryo implantation. Under physiological conditions, the endometrium is most receptive during a short interval of the secretory phase, generally between **cycle days 19 and 21** in a natural cycle (approximately **5–7 days after ovulation**). Outside this period, the endometrium does not display the molecular and structural characteristics required to support implantation. Consequently, to maximize the likelihood of success, close **synchronization between the embryo and a receptive endometrium is essential**.





# ENDORECEPT Blood

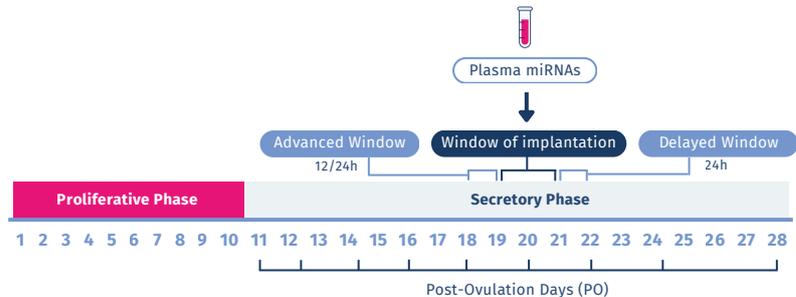
## THE FIRST NON-INVASIVE TEST TO ASSESS ENDOMETRIAL RECEPTIVITY

**ENDORECEPT Blood** is a **non-invasive** test for assessing **endometrial receptivity**. It is designed to determine, with high precision, the optimal day of the endometrial cycle to perform **embryo transfer**, by identifying the correct **window of implantation** through a **simple blood draw**.

The test is based on **plasma** analysis of specific biomarkers consisting of circulating **microRNAs (miRNAs)** involved in biological processes associated with endometrial receptivity. This approach enables the definition of a patient-specific and personalized window of implantation.

Based on the result, the physician can plan a **personalized embryo transfer** during the period of maximum endometrial receptivity, thereby increasing implantation probability and improving overall clinical outcomes.

WINDOW OF  
IMPLANTATION AND  
ASSESSMENT OF  
ENDOMETRIAL  
RECEPTIVITY THROUGH  
PLASMA miRNAs  
PROFILING



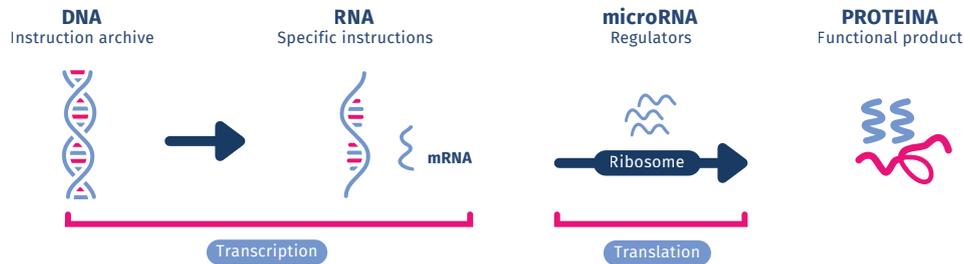
Window Displacement → possible cause of RIF



## miRNAs AS BIOMARKERS OF ENDOMETRIAL RECEPTIVITY

**MicroRNAs** (miRNAs) are small non-coding RNA molecules that modulate the expression of proteins involved in key processes of endometrial preparation for implantation, including cell adhesion and local immune modulation.

A selected set of miRNAs circulating in peripheral blood reflects the receptive state of the endometrium and can be used as biomarkers to assess the **window of implantation**. miRNAs act as regulatory molecules that reflect the biological processes underlying endometrial receptivity and can be measured in blood.



miRNAs are “regulators” that reflect the biological processes underlying endometrial receptivity and can be isolated from blood.



# ENDORECEPT Blood

miRNA expression profiles show an accuracy **>95%** in identifying a displaced window of implantation<sup>1</sup>, supporting the assessment of endometrial receptivity. In particular, miRNAs are well-suited biomarkers because they:

- ✓ are **biologically stable** compared with mRNAs, as they are protected and transported in protein complexes;
- ✓ **directly regulate gene expression** by acting on mRNAs (translation suppression and/or degradation), and are therefore functionally linked to the protein expression landscape;
- ✓ **participate in implantation mechanisms**, contributing to endometrial modulation and optimization of receptivity<sup>1-2</sup>.

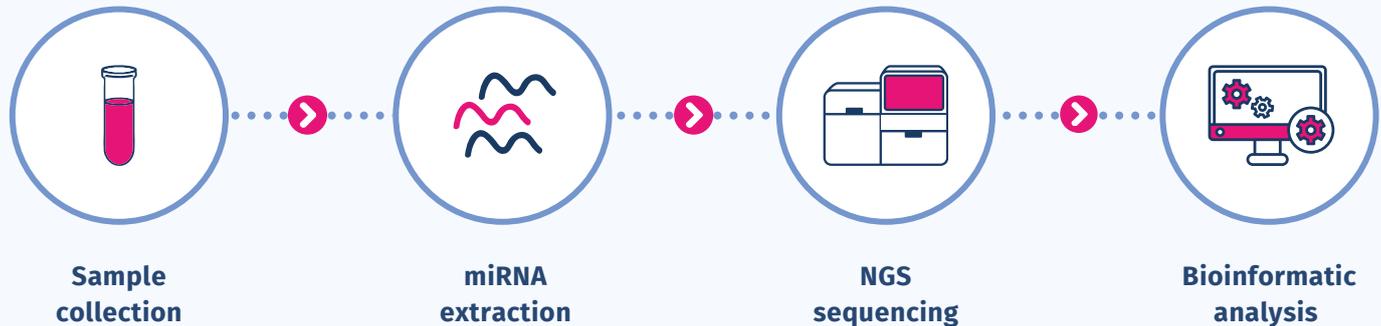
In addition, circulating miRNAs can modulate **pregnancy-related immune mechanisms** and crucial physiological processes (**cell proliferation** and **angiogenesis**), influencing the endometrial environment and, consequently, pregnancy outcomes.



1. Park H, Kim Y, Jung Y, Kim J, Kim H, Lee J, et al. Development of a Predictive Model for Optimization of Embryo Transfer Timing Using Blood-Based microRNA Expression Profile. International Journal of Molecular Sciences. 2024;25(1):76

2. Wang T, Jensen J, Li Q, et al. A novel platform for discovery of differentially expressed miRNAs in human endometrium: implications for the menstrual cycle and endometrial receptivity. Fertil Steril. 2021;115(5):1324-1334

## ADVANCED TECHNOLOGY



The test defines the **expression profile** of approximately **300 miRNA biomarkers**, capable of regulating **more than 1,000 genes** related to endometrial receptivity, using high-resolution **NGS sequencing**. An advanced bioinformatics workflow, supported by a dedicated computational predictor, processes the miRNA expression profile and classifies samples according to endometrial receptivity status.



# ENDORECEPT Blood

## TEST ADVANTAGES



### Non-invasive

The test analyzes biomarkers in **peripheral blood**, avoiding the need for an endometrial biopsy, a more invasive and potentially uncomfortable procedure for the patient.



### Accurate

The analysis achieves an accuracy **>95%** in predicting endometrial receptivity, providing a reliable and reproducible tool to support embryo transfer planning.



### Comprehensive

The test evaluates approximately **300 miRNA** biomarkers regulating more than **1,000 genes** related to endometrial receptivity, enabling precise identification of the optimal time for embryo transfer.



# ENDORECEPT Blood

## TEST RESULTS



**RECEPTIVE:** The miRNA expression profile is consistent with an endometrial **receptive** state. This indicates that the window of implantation coincides with the day of sample collection.



**PRE-RECEPTIVE:** The miRNA expression profile is consistent with an endometrium at the **beginning of the receptive phase**. Based on the test results, full receptivity is expected to be reached after approximately **24 hours**.



**POST-RECEPTIVE:** The miRNA expression profile is consistent with a **post-receptive** endometrium. The result indicates that the endometrium has already passed the receptive phase and that the window of implantation has likely ended. Based on the test results, it is recommended to advance embryo transfer by approximately **12–24 hours**.

## WHEN TO COLLECT THE SAMPLE

For the analysis, a peripheral blood sample is required and must be collected in a **Streck tube**, carefully following the instructions provided.



**A**

### Sample collection day in an HRT cycle:

5 days (120 h) after starting progesterone.

**B**

### Sample collection day in a natural cycle:

- 7 days (168 h) after the LH peak
- 7 days after hCG administration.

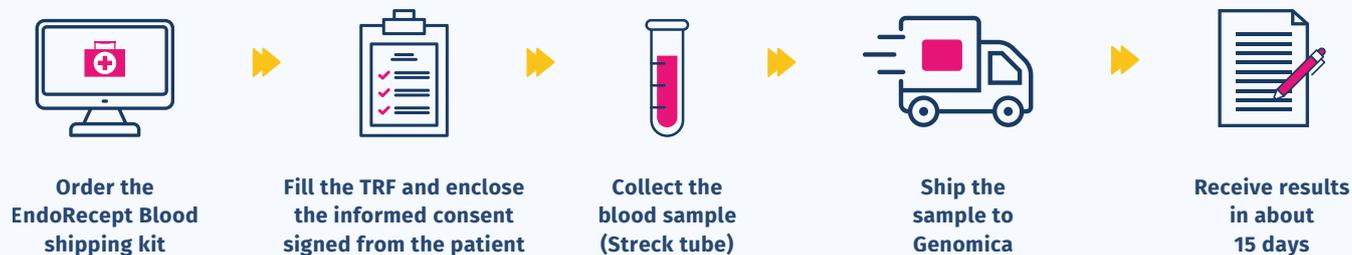


## INDICATIONS FOR TESTING

**ENDORECEPT Blood** is indicated for patients with one or more of the following conditions:

- ★ History of implantation failure or miscarriage
- ★ Limited number of high-quality embryos
- ★ Low or high BMI
- ★ Age  $\geq 35$  years

## THE WORKFLOW



**Turnaround time**



**~15 days**

GENOMICA is a highly innovative company with extensive technical and scientific expertise, active in both clinical applications and research. Supported by a team with over 20 years of experience in molecular diagnostics, GENOMICA combines cutting-edge technology with a strong commitment to innovation, delivering increasingly accurate and accessible diagnostic services.



Over **100.000 genetic tests/year**



Laboratories with **groundbreaking technologies** and high quality standards



Dedicated **R&D Team**



International **Partnerships**



**Personalized genetic counseling** with genetic counselors experts in discussing genetic test results and familial risks



**20+ years experience** in prenatal molecular diagnostics

## LABORATORIES

Rome: Via Arduino 38 - 00162 Tel.: 06.21115020  
E-mail: [info@genomicalab.it](mailto:info@genomicalab.it)  
[www.genomicalab.it](http://www.genomicalab.it)

## REGISTERED OFFICE

Rome: Via Arduino 38 - 00162  
PEC: [info@pec.genomicalab.it](mailto:info@pec.genomicalab.it)  
VAT No.: 14554101007 - REA: RM - 1530210

Visit the website  
dedicated to the test

