mfine /diagnostics

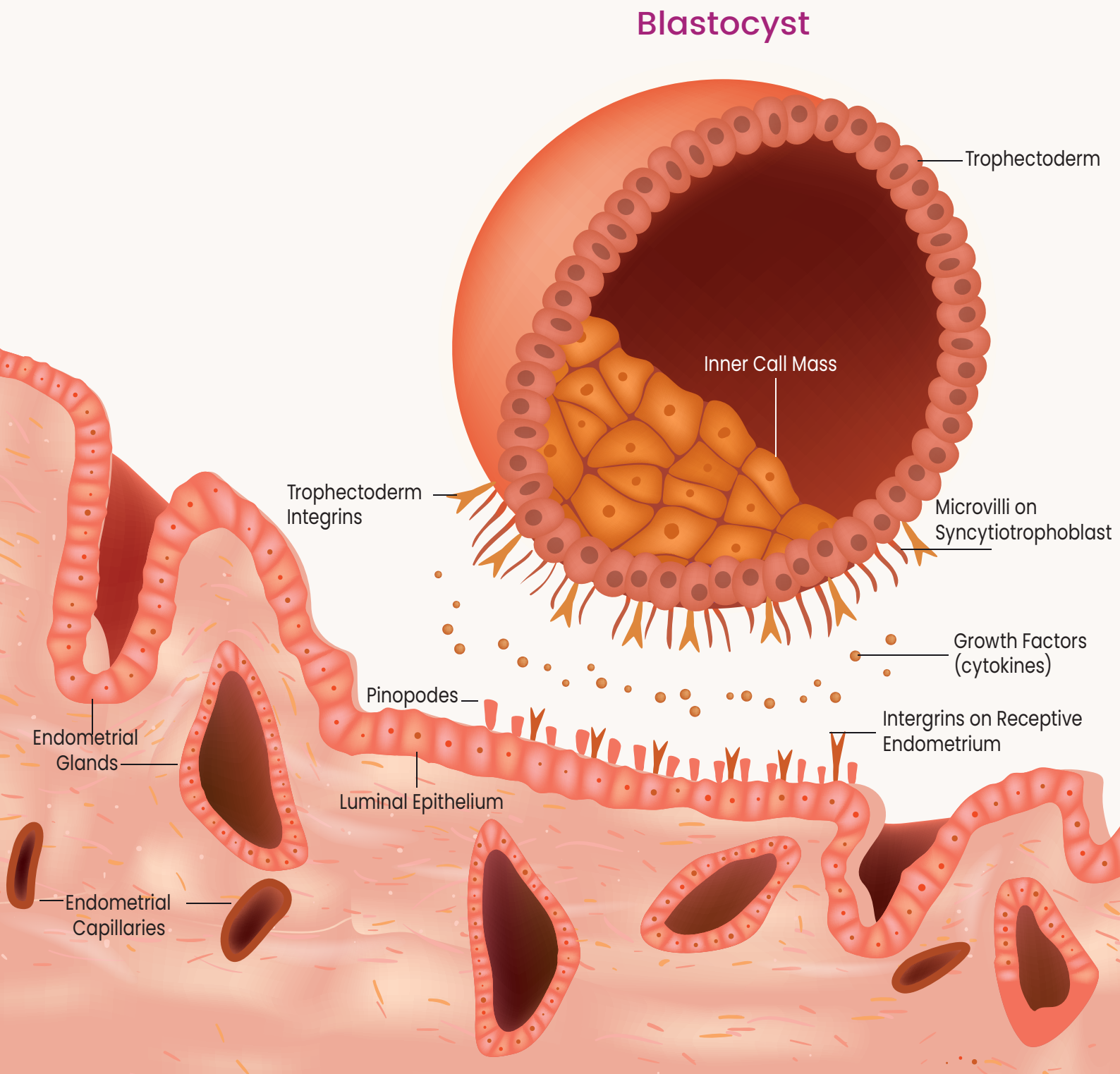
ERScope

The Next Generation RNA Sequencing and AI Based Endometrial Receptivity Test

Name of Salesperson: ..... Contact: .....

support@mfine.co www.mfine.co

Choose ERScope During The IVF Process To Find The Precise Timing Of Embryo Transfer Thereby Enhancing Treatment Success



Implantation is a complex cellular and molecular "dialogue" between the embryo, and the receptive endometrium that orchestrates numerous molecular pathways fundamental for a successful pregnancy, as well for regulating immunomodulatory factors. [E Maziotis et. al. 2022]

What Is ERScope?

Endometrial Receptivity plays a crucial role in blastocyst implantation success. ERScope is an RNA-seq based endometrial receptivity test. It analyzes the expression of genes related to endometrial receptivity through high-throughput RNA sequencing and machine learning to accurately determine what stage of receptivity the biopsied endometrium is in. This provides valuable guidance for precise timing of embryo transfer to improve the success rate of IVF treatment[1].

DID YOU KNOW?

The optimal time for embryo transfer varies among individuals

What Is Endometrium Receptivity?

Endometrium and endometrial lining are critically important for IVF success, implantation and sustained pregnancy[2]. Many women undergoing IVF are unable to get pregnant, even after transferring good quality embryos. This is because it is equally important to transfer the embryo when endometrium is receptive and ready for embryo implantation.The period during which the endometrium is most receptive is called the Window Of Implantation (WOI) which may vary from patient to patient.

DID YOU KNOW?

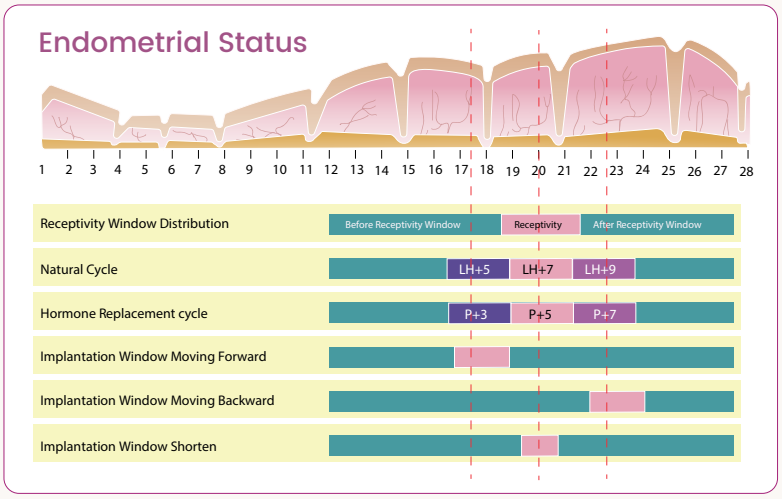
Displacement of WOI is present in 1 of 4 patients with RIF[6]

Why Opt For ERScope?

The synchronization between ready-to-be implanted embryo and endometrium is a prerequisite for successful transplantation. Approximately 60% of RIF can be attributed to abnormal maternal Endometrium Receptivity, which presents as a displacement and/ or pathological disruption of the WOI [4].

In such cases, conventional implantation plans may not work resulting in implantation failure.

ERScope can accurately determine the implantation window and assist to schedule the personalized embryo transfer for such patients, therefore increasing the success rate of implantation, and avoiding wastage of ready-to-implant embryos which are extremely precious!



The WOI usually occurs on days 19–21 of the menstrual cycle, on day 7 after the LH surge (LH+7) in the natural cycle or on day 5 after progesterone administration (P+5) in the artificial cycle. Some females have a displaced endometrial window, which can delay, advance or narrow the WOI.

Displaced WOI contribute to embryo-endometrial asynchrony, resulting in Implantation Failure

What Are The Benefits Of Choosing ERScope?

ERScope is a more sensitive and objective test than the classical endometrial dating method, based on histological criteria, with a high level of reproducibility.

It analyzes the expression of more than 200 genes associated with endometrial receptivity and immune response linked to embryo implantation by Next Generation Sequencing(NGS) .

Precise
Our platform is capable of providing consistently high-quality results even in variable conditions. Accuracy of over 93.3% using RNA-seq powered with Machine Learning and Artificial Intelligence.

Effective
More than 60% improvement in the clinical pregnancy rate for patients suffering RIF.

Reduced IVF Treatment Cycles
Transferring the embryo at the right time can decrease the overall number of IVF treatment cycles needed before obtaining a successful pregnancy. This saves time, money and also the embryos.

Reduced Implantation Failure Rates & Increased Chances Of Obtaining A Successful Pregnancy
By determining the functional Stage of Endometrium in order to schedule the embryo transfer on the most suitable date ERScope consequently increases the chances of embryo implantation and pregnancy.

Less Invasive – Less Sample Needed With A Lower Failure Rate
ERScope is able to detect even the lowest sample amounts, reducing the failure rate of the test and the need for resampling by more than 50% compared to other technologies.

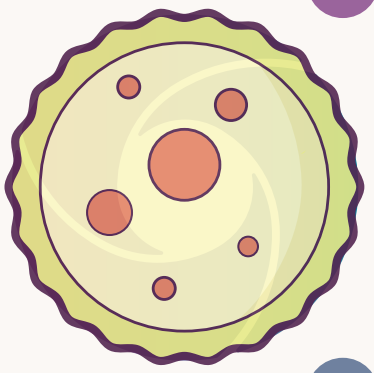
No Freezing Is Required Before The Dispatch
The sample is stable for a long duration once preserved in the provided cryotube thereby eliminating the need for sample freezing before dispatch.

With ERScope achieve 51-63% pregnancy rates in patients with RIF

What Can ERScope Tell?

ERScope analyzes the endometrial biopsy collected from the uterine fundus and identifies the optimal implantation time for a personalized embryo transfer during the patient's next treatment cycle.

For maximizing the utility of the ERScope result the procedure should replicate the planned embryo transfer process, as closely as possible.



1

Receptivity Stage: Best Time To Implant

In the Window Of Implantation (WOI)

A Receptive result on the report indicates:

- The time of the tissue biopsy was the optimal time for embryo transfer
- The same conditions and timing can be used during their subsequent treatment cycles for the most favourable personalized embryo transfer conditions.

2

Pre-receptivity Stage: Adjust Implantation Time

NOT in the Window of Implantation (WOI)

A Pre-Receptive result on the report indicates:

- The time of the tissue biopsy was not in the optimal time period for embryo transfer
- The timing of embryo transfer for the patient should be shifted later in order to increase the chances of a successful implantation.

3

Post-receptivity Stage: Adjust Implantation Time

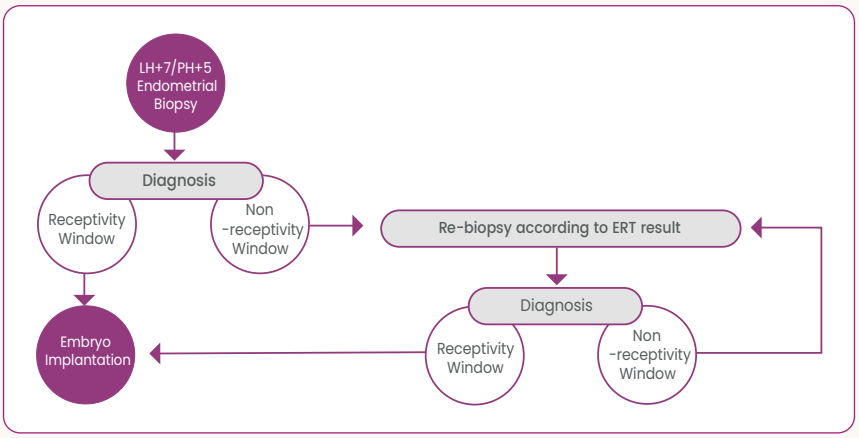
NOT in the Window of Implantation (WOI)

A Post-Receptive result on the report indicates:

- The time of the tissue biopsy was not in the optimal time period for embryo transfer
- The timing of embryo transfer for the patient should be shifted earlier in order to increase the chances of a successful implantation.

Inconclusive: The analysis was not able to determine the optimal time for embryo transfer. This could be a result of an exceptionally low quality or low quantity biopsy sample. Lab will follow up with you to discuss altering the steps of the biopsy in order to retest the patient for a more comprehensive result. An inconclusive result is observed in less than 1% of the cases.

ERScope Decision Tree



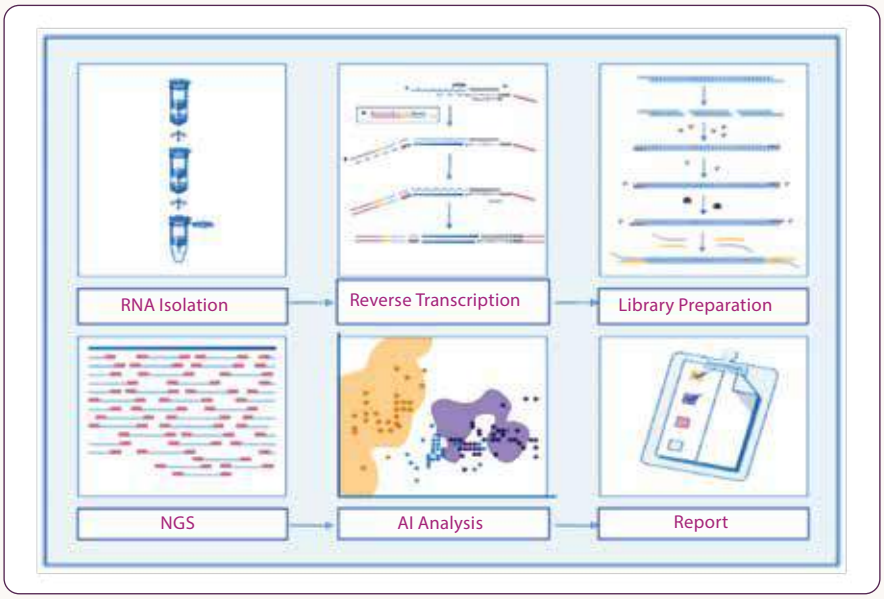
Who Should Opt For ERScope?

Any woman undergoing IVF may use ERScope to increase her chances of successful implantation. It is specially indicated for couples who, in-spite of having morphologically high grade and/or euploid (screened by our advanced PGT-A) embryos experience RIF, as a displaced WOI may be the underlying cause.

- For diagnosis of endometrial factors in the work-up of infertile couples
- Patient with few euploid embryos
- Patients with RIF
- Patients with Adenomyosis [5]

ERScope is compatible with both Natural Cycles and Hormone Replacement Therapy Cycles

Laboratory Workflow Of ERScope

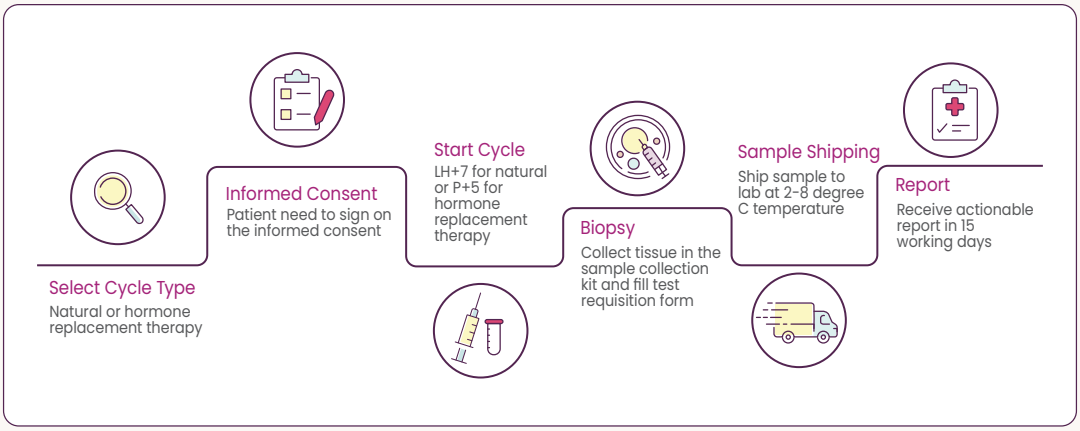


ERScope by RNA-Seq offers benefits of ultra-high sensitivity, dynamic range, more accurate quantification, and whole-transcriptome analysis which allows identification of differentially expressed genes (DEGs) [3]

ERScope is a molecular diagnostic tool that identifies a receptive endometrium based on a specific transcriptomic signature

How Is ERScope Performed?

ERScope requires an endometrial biopsy obtained 7 days post endogenous LH peak (LH+7) in a natural cycle or 5 days after the first progesterone dose (P+5) in a hormone replacement cycle. The biopsy is smoothly obtained by a gynecologist and sent in the cryotube provided by our lab.

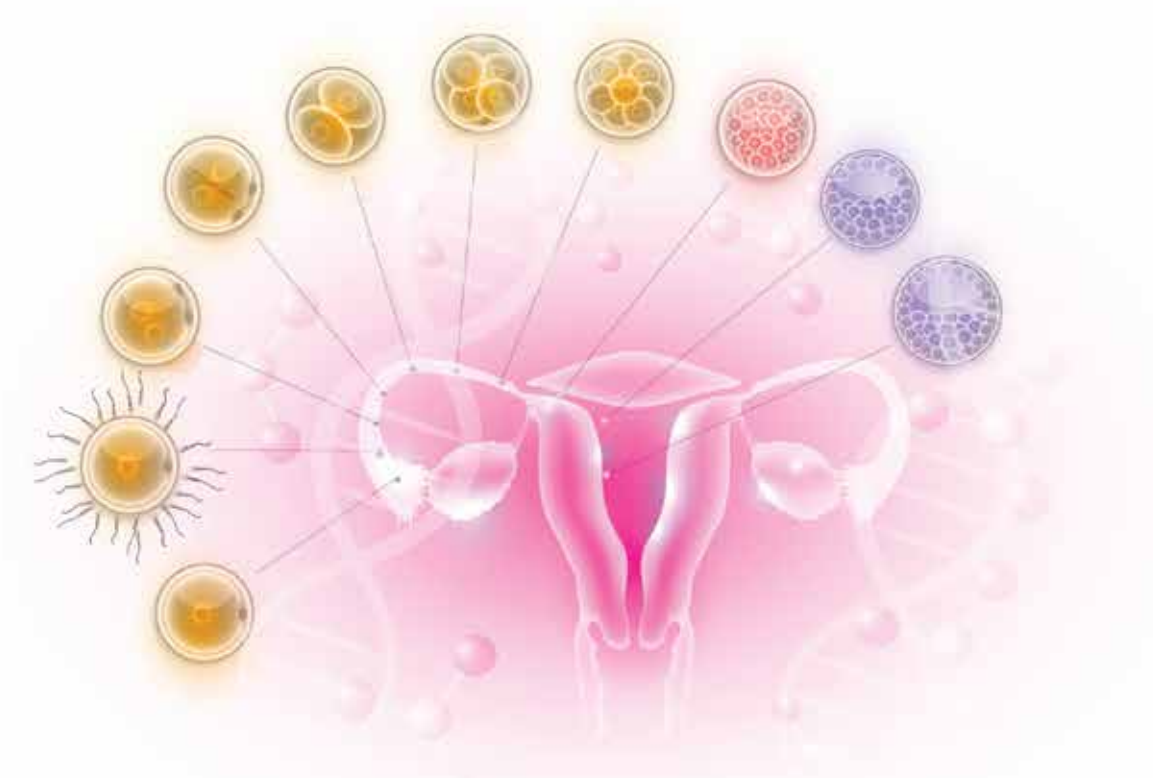


Note: Ensure Biopsy material is submerged in the preservation buffer provided in the cryotube. Gently mix the contents by inverting the tube 10 times.

Disclaimer: Undergoing the ERScope test will not guarantee a successful implantation, as there are many other factors that can affect a successful implant. However, understanding your patient's endometrial receptivity will help eliminate a displaced WOI as a reason for implantation failure.

DID YOU KNOW?

ERScope has the answer you are looking for!



Entire Range Of Genetic Testing Options To Complement The IVF Journeys

- Male and Female Infertility Carrier Screening, Donor Screening
- DICE-A comprehensive panel for the Detection of Infectious Chronic Endometritis
- Prenatal Screening and Diagnostics Testing Solutions
- Biopsy Training Support
- Laser Machine and Technician Support
- Dedicated and Prioritized Logistics Support
- Preimplantation Genetic Testing A, SR and M
- Complimentary Genetic Counseling with Clinical Geneticists and Board Certified Genetic Counsellors

References

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2. Achache H, Revel A. Endometrial receptivity markers, the journey to successful embryo implantation. Hum Reprod Update, 2006;12(6):731-46.
3. He A, Zou Y, Wan C, et al. The role of transcriptomic biomarkers of endometrial receptivity in personalized embryo transfer for patients with repeated implantation failure. J Transl Med. 2021;19(1):176. Published 2021 Apr 28. doi:10.1186/s12967-021-02837-y
4. Sebastian-Leon P, Garrido N, Remohi J, Pellicer A, Diaz-Gimeno P. Asynchronous and pathological windows of implantation: two causes of recurrent implantation failure. Hum Reprod. 2018;33:626–35.
5. Mahajan N, Kaur S, Alonso MR. Window of Implantation is Significantly Displaced in Patients with Adenomyosis with Previous Implantation Failure as Determined by Endometrial Receptivity Assay. J Hum Reprod Sci. 2018;11(4):353-358. doi:10.4103/jhrs.JHRS_52_18

We Deliver
Unmatched Experience

When you choose us,
you choose to Expedite and Enhance your patient's diagnosis

When you put your trust on us
Our TOP Priority is to Reciprocate

support@mfine.co www.mfine.co