

# ADVANCED SPERMIOGRAM



Other factors beyond count, motility and morphology can influence sperm function and could provide valuable information for male infertility diagnosis and treatment

Infertility in men is one of the main known causes of infertility amongst couples, contributing up to 50% of cases. A man could be completely healthy, but produce poor quality sperm. A semen analysis is the most important male infertility test. Conventional semen analyses include the determination of count, motility and morphology of spermatozoa. These parameters are important, however there are many other factors that could influence sperm competence. iGLS provides the most comprehensive semen analysis, including advanced sperm functionality tests so that the best diagnosis and treatment can be offered to patients.

## Our Advanced Spermogram includes:

- Sperm DNA fragmentation test
- FACS-Annexin V apoptosis test
- Y-chromosome microdeletions Test
- Ploidy Test
- Oxidative stress (ROS) Test

## METHODOLOGY



Sample collection



Freezing at -20° C



Sample shipment in dry ice



Advanced spermogram



Results in 10 working days

## Sperm DNA Fragmentation Test

The presence of fragmented DNA in the nucleus of spermatozoa negatively influences reproductive outcomes. iGLS Sperm DNA Fragmentation test uses flow cytometry to measure the stability of sperm chromatin and provide an estimate of the percentage of spermatozoa with fragmented DNA. All couples undergoing ART treatment could potentially benefit from Sperm DNA Fragmentation testing. This test is particularly recommended in men over 40 years of age, individuals exposed to toxic agents, patients who have urogenital infection or who have been treated of cancer. Sperm DNA Fragmentation test can help couples who have experienced repetitive miscarriages or recurrent failed cycles and also couples with unexplained infertility.

## FACS-Annexin V Apoptosis Test

Apoptosis (i.e. selective cellular death) plays an important role in spermatogenesis by eliminating structurally or functionally defective sperm cells. The presence of abnormally high levels of apoptotic spermatozoa in the ejaculate compromises male fertility. FACS-Annexin V apoptosis test quantifies the number of sperm cells undergoing apoptosis in the ejaculate and/or in sperm preparations for assisted reproduction. This assay uses the protein Annexin V to tag apoptotic and dead cells; numbers of tagged spermatozoa are then counted using flow cytometry. Specimen quality of samples with abnormally high levels of apoptosis can be improved by specific depletion of apoptotic spermatozoa using MACS ART Annexin V system columns.

## Y-Chromosome Microdeletion Test

Microdeletions in the azoospermic factor (AZF) region of the Y chromosome account for 10-15% of azoospermia and 5-10% of oligospermia in men. Our Y-Chromosome Microdeletion Test examines by multiplex PCR analysis four regions of the Y chromosome – AZFa, AZFb, AZFc and AZFd – to help identify causes of infertility in men.

## Oxidative Stress (ROS) Test

Spermatozoa produce small amounts of free oxygen radicals (ROS) that are essential for their normal function. The amount of these ROS is controlled by antioxidants present in the seminal plasma. However, if the balance of ROS production and antioxidant activity is disturbed, high levels of ROS will build up, causing oxidative stress which leads to sperm damage and reduced fertility. iGLS Oxidative Stress Test uses the cell-permeant 2,7-dichlorodihydrofluorescein diacetate (H<sub>2</sub>DCFDA) to measure the amount of ROS in a fresh semen sample. Increased levels of ROS may be reduced with a change in lifestyle and a diet rich in anti-oxidants.

## Ploidy Test

Semen from patients with severe male infertility and defective spermatogenesis may contain immature germinal cells. iGLS Ploidy Test assesses defects in spermatogenesis by identifying the ploidy of the spermatogenic cells present in the ejaculate. In this assay cells in semen samples are examined by quantitative flow cytometry allowing easy differentiation between tetraploid spermatocytes, diploid spermatogonia, haploid round spermatids and spermatozoa. This method may serve as a simple, non-invasive and reliable assay to help counsel patients with severe male infertility before referring them for testicular surgery.

iGLS

Advanced Genetic Services

+34 965 118 029 • [info@igls.net](mailto:info@igls.net)

[www.igls.net](http://www.igls.net)