

Technology Offer

Ref.-No. M12/19

Sperm stratification

Introduction

Sperm DNA damage is prevalent among infertile men, becoming one of the most discussed and promising biomarkers for the assessment of male fertility. Unfortunately, the currently available methods for DNA evaluation do not distinguish between live or dead cells in terms of membrane integrity. Therefore, the extent of DNA damage among live spermatozoa, which are the ones used and wanted for Assisted Reproductive Technologies (ART), remains unknown for clinical use. Thus, there remains a need in the art for a refined method of sperm stratification usable in clinics and research for fertility analysis.

Invention

The present invention describes a method for stratifying human or animal spermatozoa. Combining simultaneous assaying for sperm membrane integrity and nuclear DNA fragmentation, the stratification method allows an analysis of four relevant sperm categories and assessment of fertilizing potential. A kit may provide standardization and quality control measures for easy application.

Advantages of the invention

The present invention is a rapid, accurate, cost-effective and easy to apply method, which associates levels of DNA fragmentation with vitality readout and provides four categories for sperm quality. It provides clinically relevant information for the diagnostic of male infertility and guides decision on treatment options. Additionally the method adds new endpoints to diverse research fields e.g. reproductive physiology, sperm biology, germ cell function, fertilization and reprotoxicology.

Areas of application

reproductive medicine, male fertility

Keywords

DNA fragmentation, fertility analysis, ART, sperm DNA

Development Status

experimental proof of concept

Commercial Opportunity

The technology is offered for in-licensing and co-development

Patent Status

patent applications filed in Europe and USA

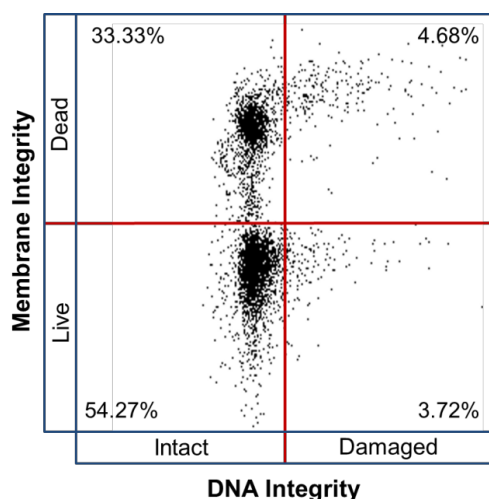
Publications

<https://pubmed.ncbi.nlm.nih.gov/33830681/>

Contact

Clinic Invent
Medical Faculty
University of Münster
Albert-Schweitzer-Campus 1,
Building D3
48149 Münster, Germany

Dr. Marion Willenborg
clinic-invent@uni-muenster.de
www.clinic-invent.de



Sperm DNA and Membrane Integrity plot.
The X-axis represents the DNA fragmentation and the Y-axis the fluorescence of a vitality dye. Each dot represents individual spermatozoa classified in four different categories.

