



COMPARATIVE STUDY OF FERTILITY PARAMETERS IN VITRIFIED HUMAN SPERM IN THE PRESENCE AND ABSENCE OF EMBRYORP®: A NOVEL ANTIOXIDANT



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INTRODUCTION

Vitrification is a novel technique used for sperm cryopreservation, despite the negative effects on structural and functional parameters frequently observed due to cryodamage. To cease this impairment, numerous studies have targeted to protect from the excessive production of reactive oxygen species (ROS) as has been suggested as a notable damaging factor during freezing processes.

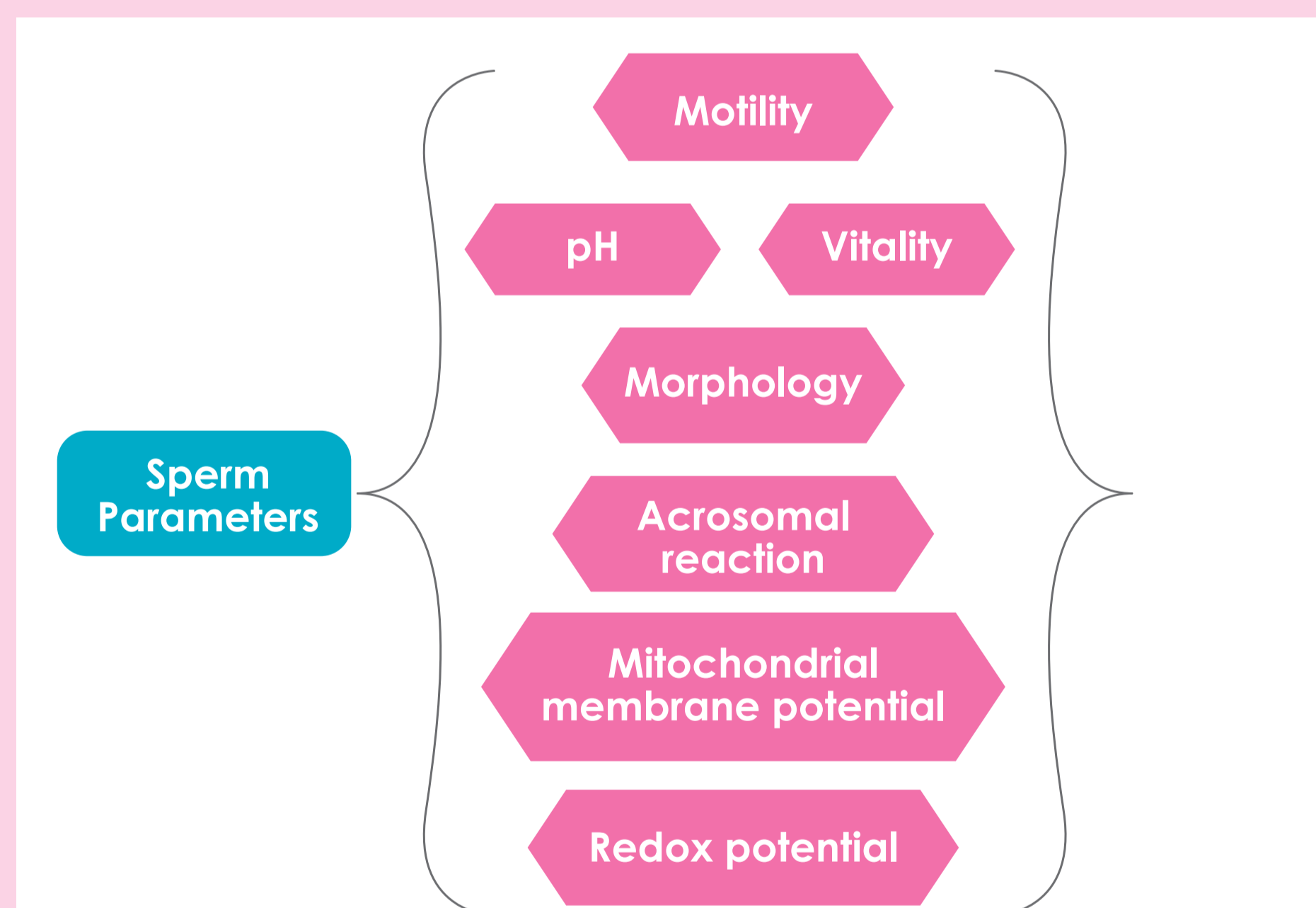
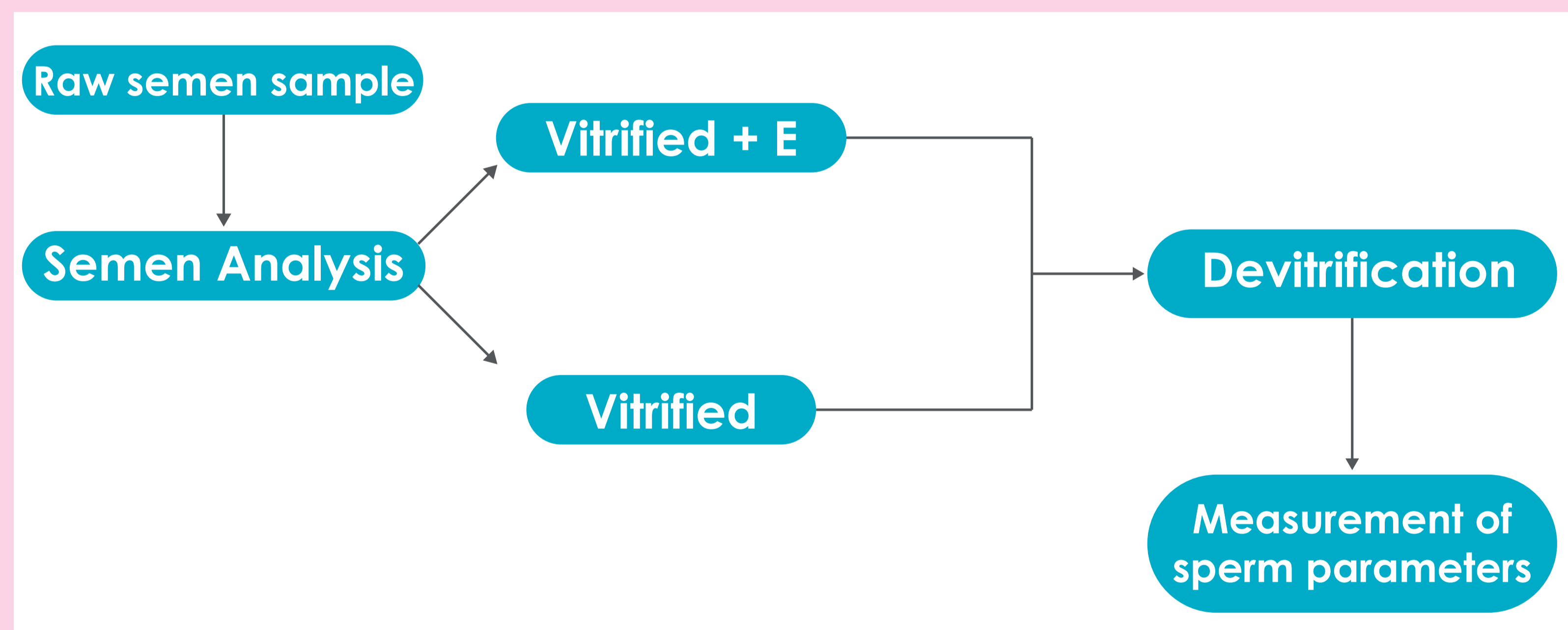
ROS play a major role in sperm physiology, been beneficial or harmful according to the antioxidant scavenging capacity of the cell which is diminished by the cryopreservation medium.

Hence, addition of EmbryORP® an antioxidant specialized in culture human embryos at physiological levels of Oxidation Reduction Potential (ORP) in all types human embryo culture media, may be an appropriate approach to minimize cryodamage and improved sperm quality.

MATERIALS AND METHODS

This study included 20 normozoospermic sperm samples from healthy donors between 23 and 40 years old, that were used to evaluate a novel antioxidant: EmbryORP® on functional and structural sperm quality parameters in a standard vitrification protocol.

A new technology called LensHooke® was used to standardize sperm measurements avoiding subjectivity related to conventional sperm evaluation. This device allows measurements of pH, concentration, motility and morphology, as well as recording a video of the sperm next to their trayectories and abnormal morphology detected. All with a single drop of sample.



CONCLUSIONS

Sperm Vitrification with EmbryORP®

Better acrosome preservation

Neutralizes the pH

Decreases the ORP

Lowers the MMP

Vitrification without EmbryORP®

Higher Sperm Concentration

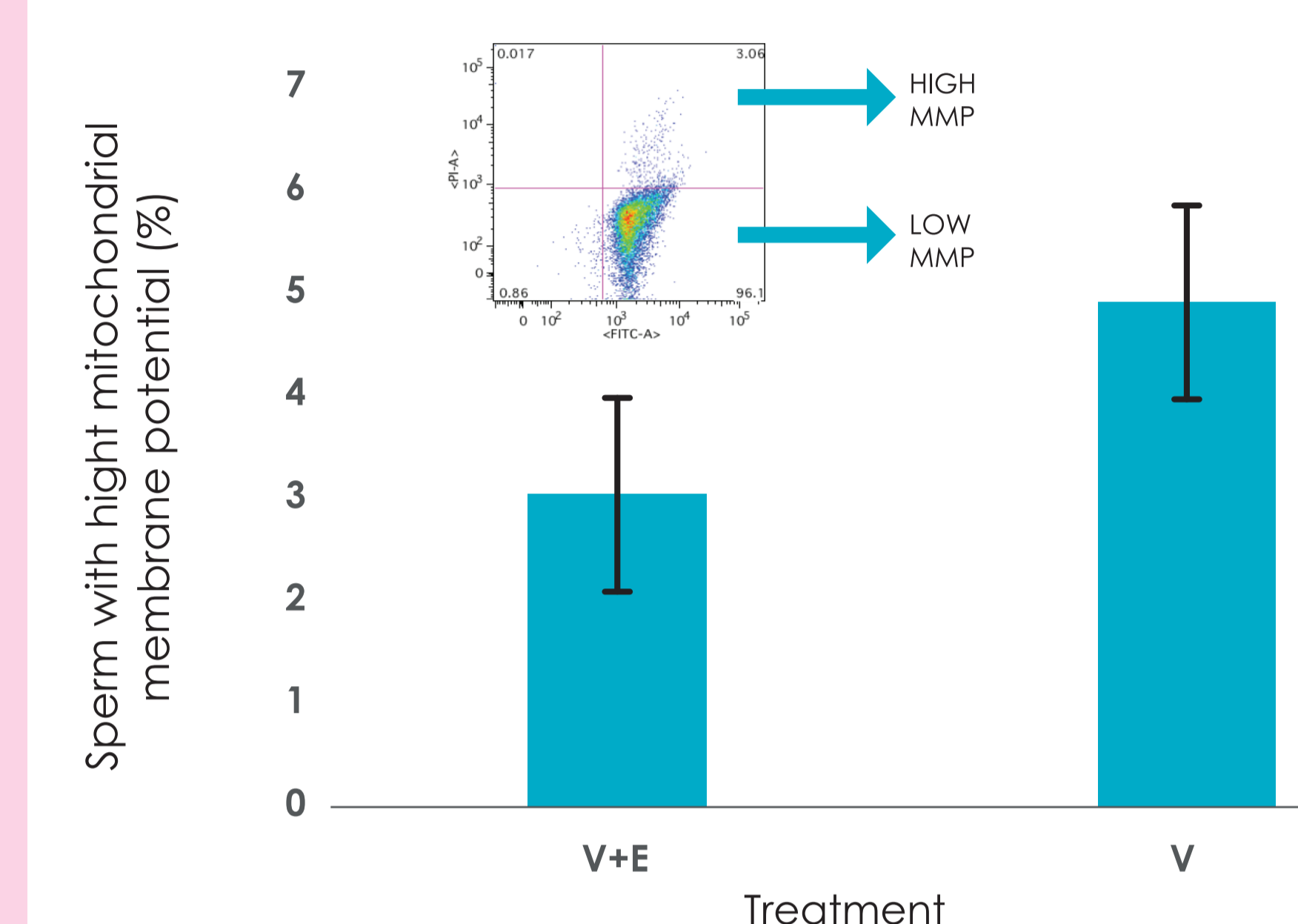
Better Sperm Morphology

These results allow us to conclude that the current antioxidant concentration contained in EmbryORP® could produce reductive stress on the sperm cells.

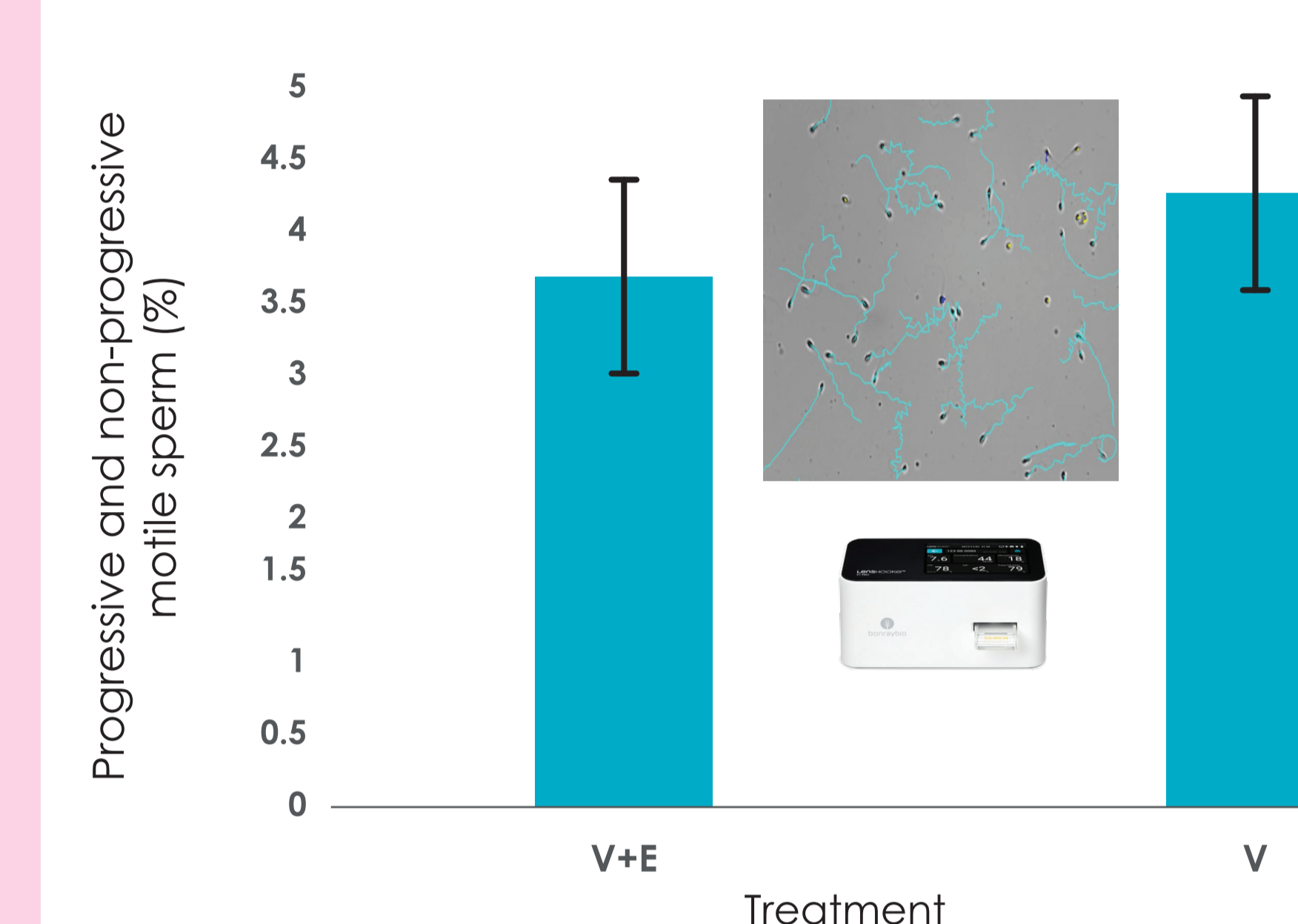
Changes on the antioxidant concentration of EmbryORP® could improve the evaluated parameters after sperm vitrification.

RESULTS

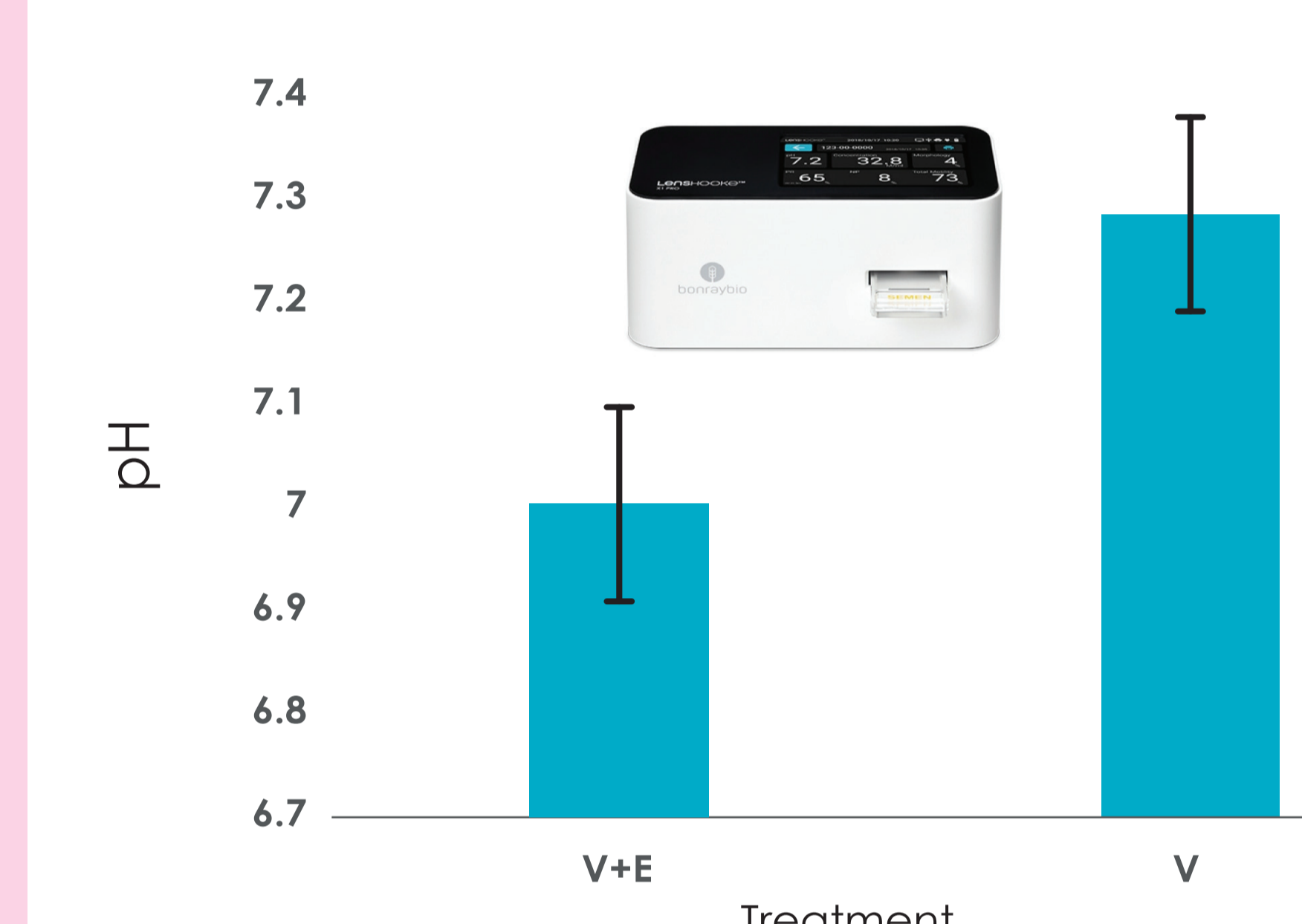
MITOCHONDRIAL MEMBRANE POTENTIAL



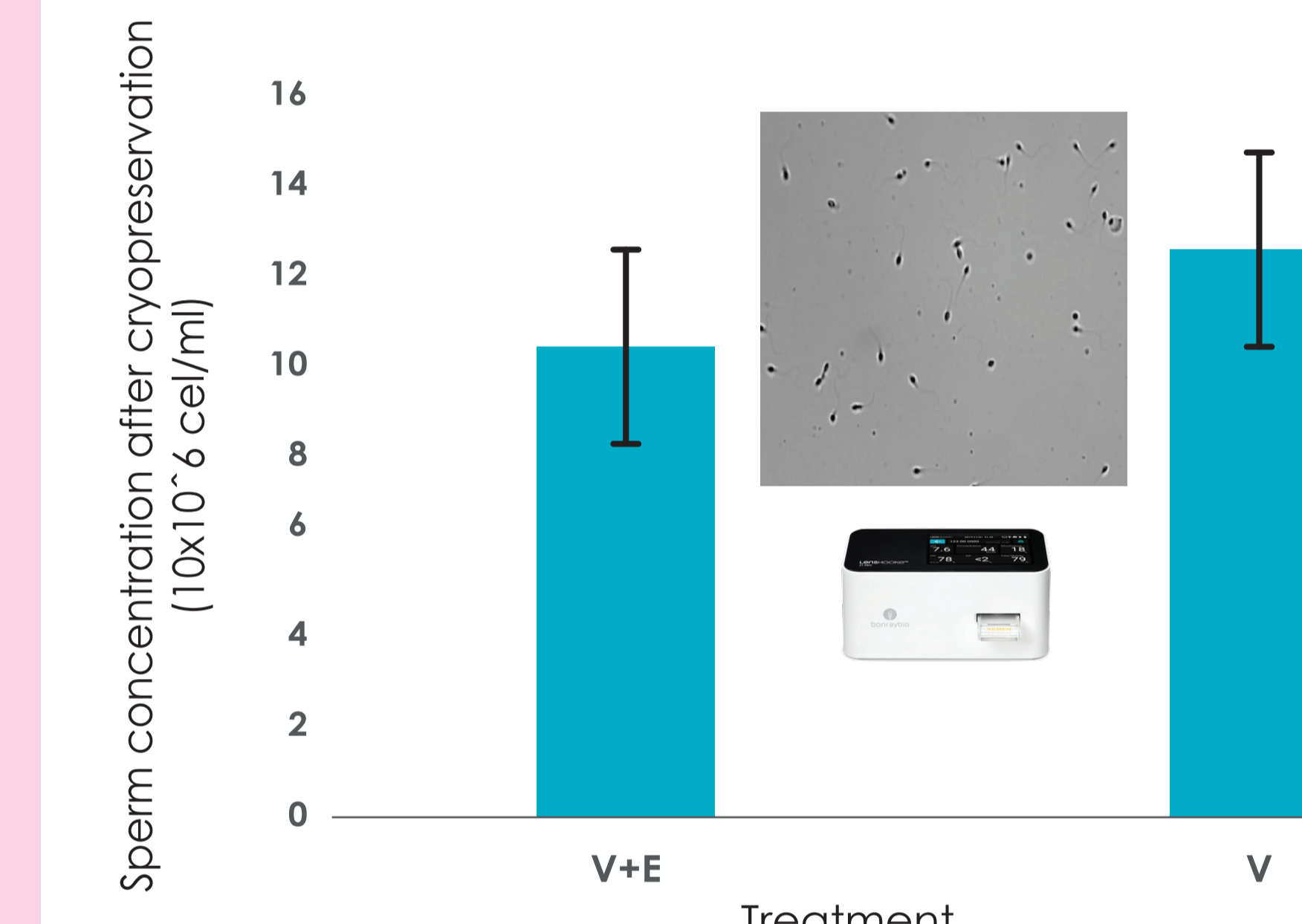
MOTILITY



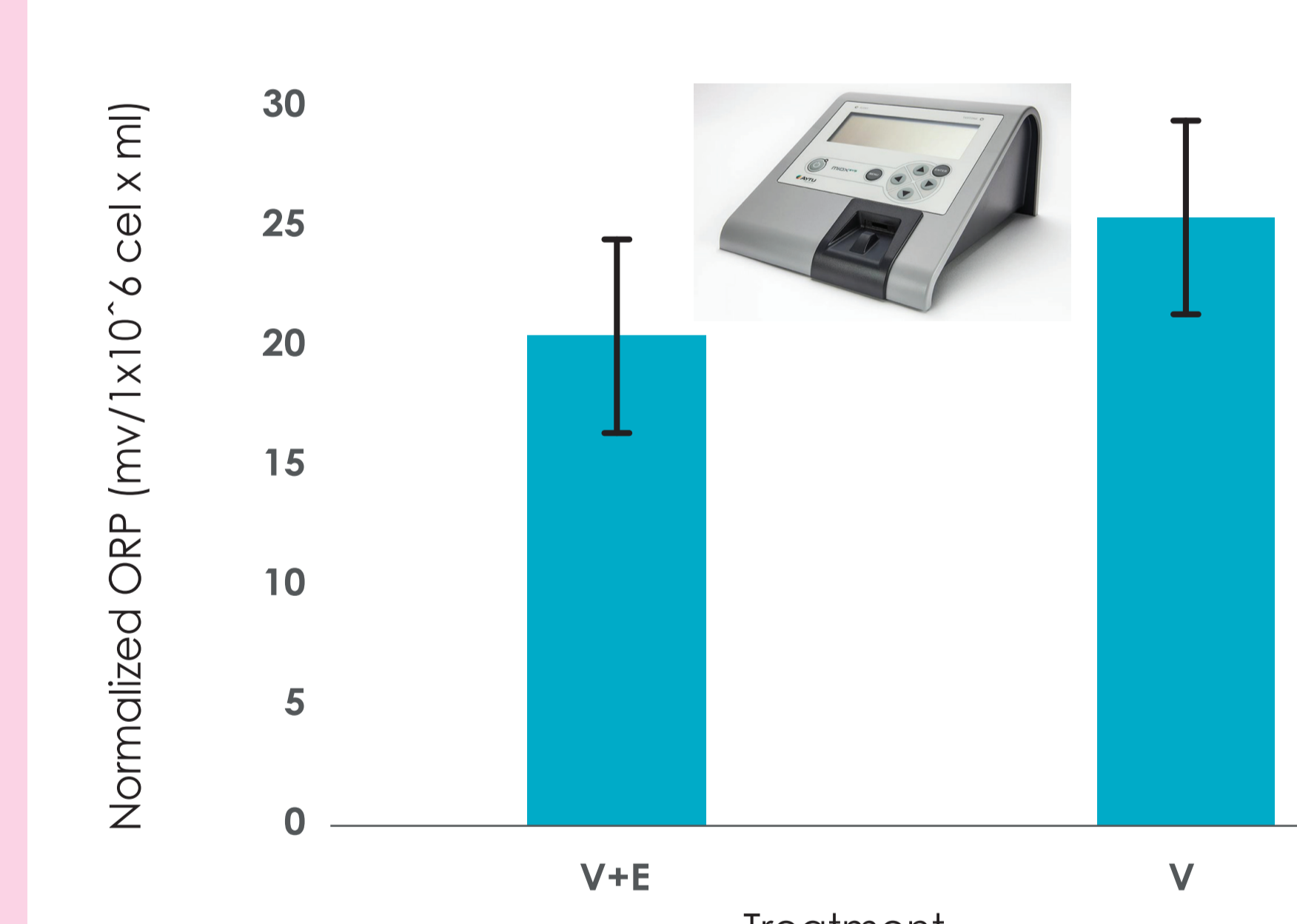
PH



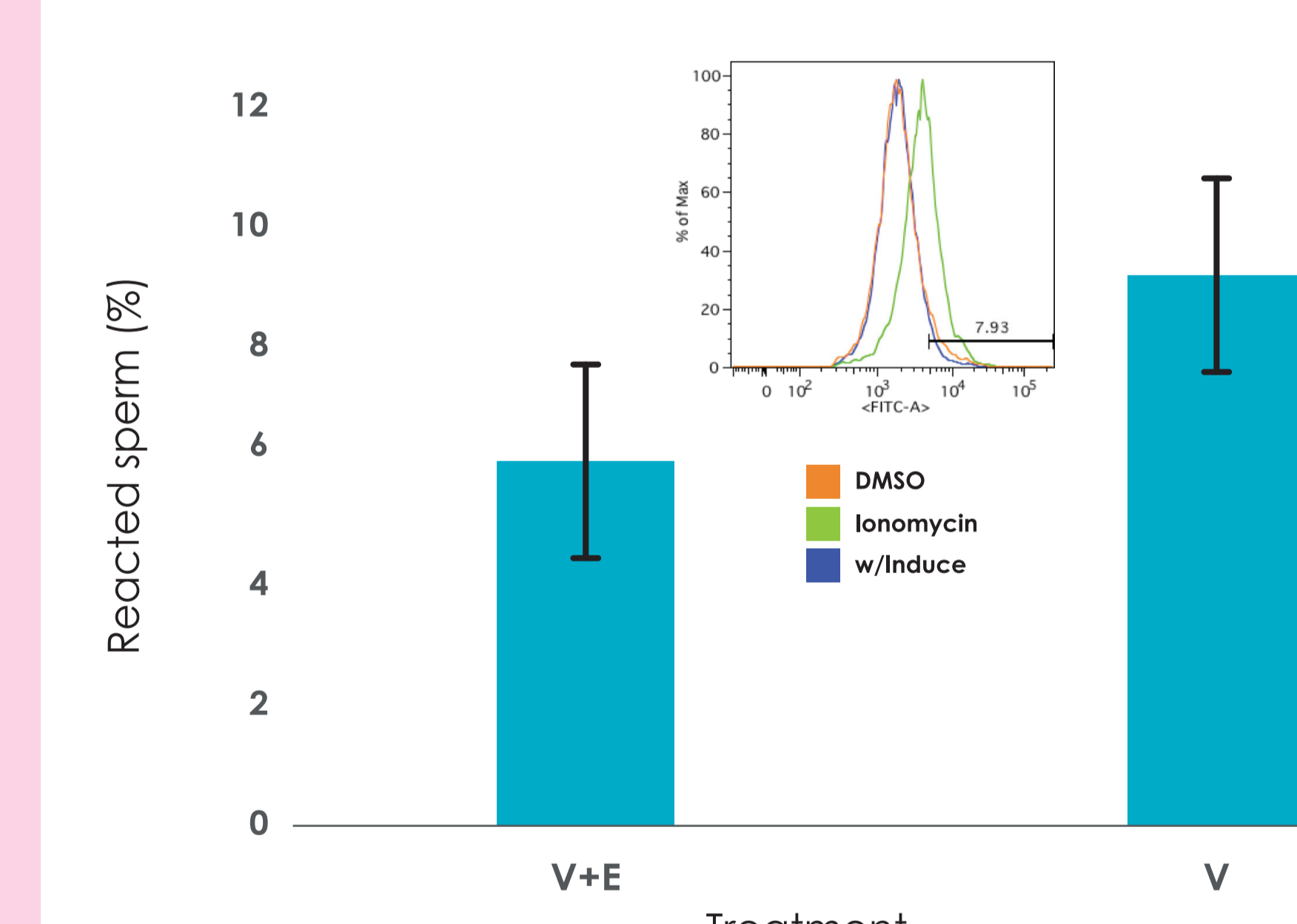
CONCENTRATION



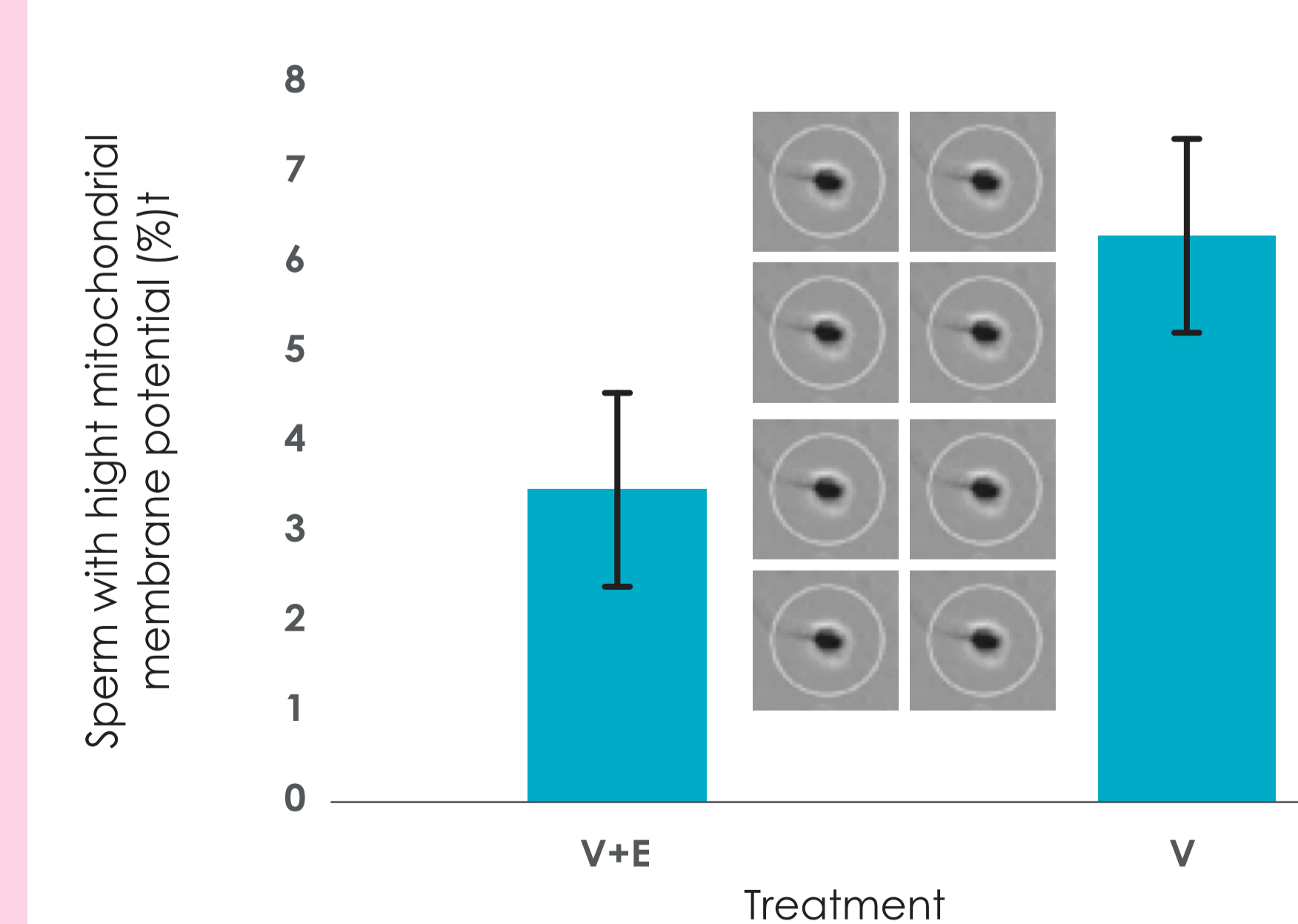
REDOX POTENTIAL



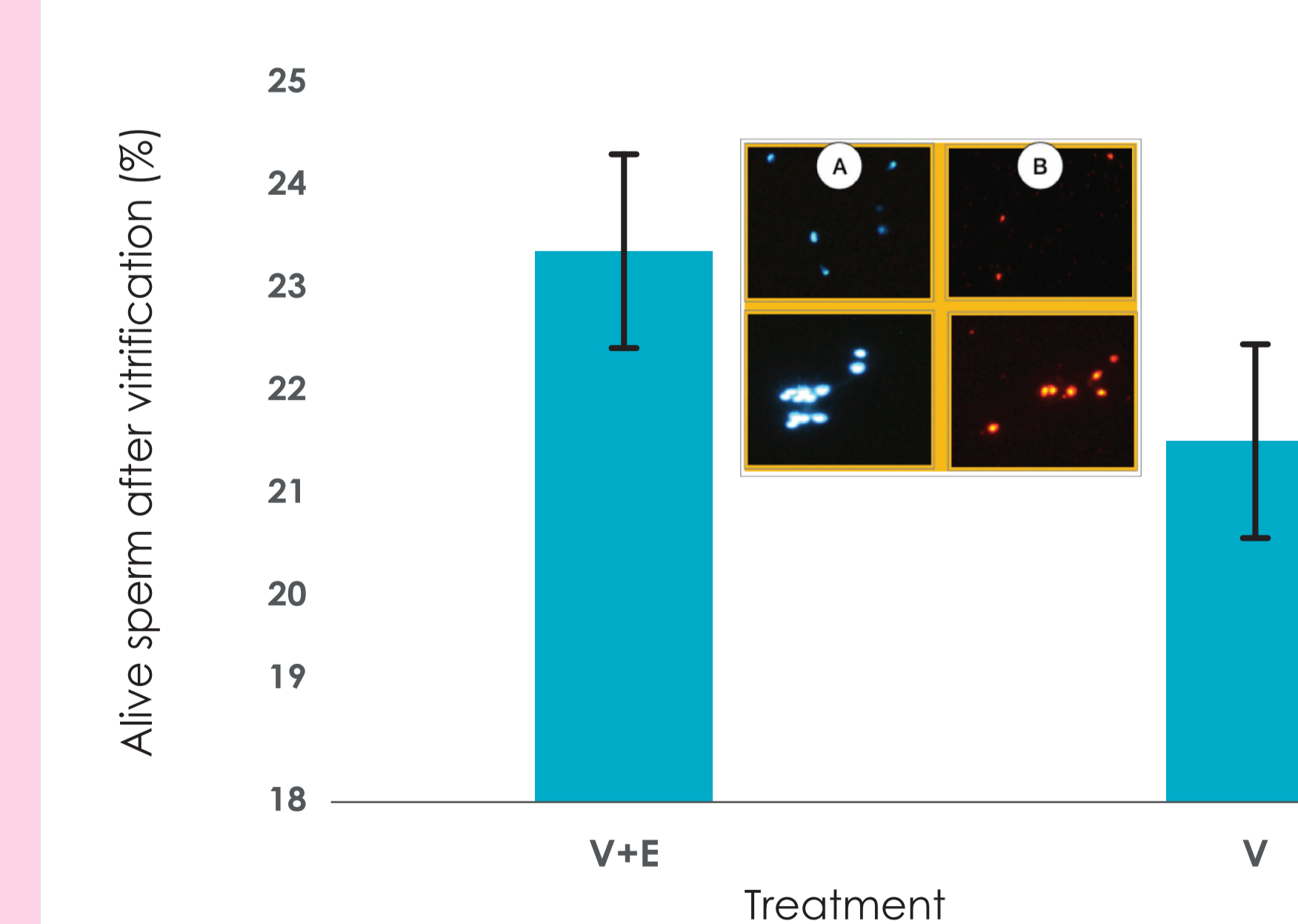
ACROSOMAL REACTION



MORPHOLOGY



VITALITY



SPECIAL THANKS

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