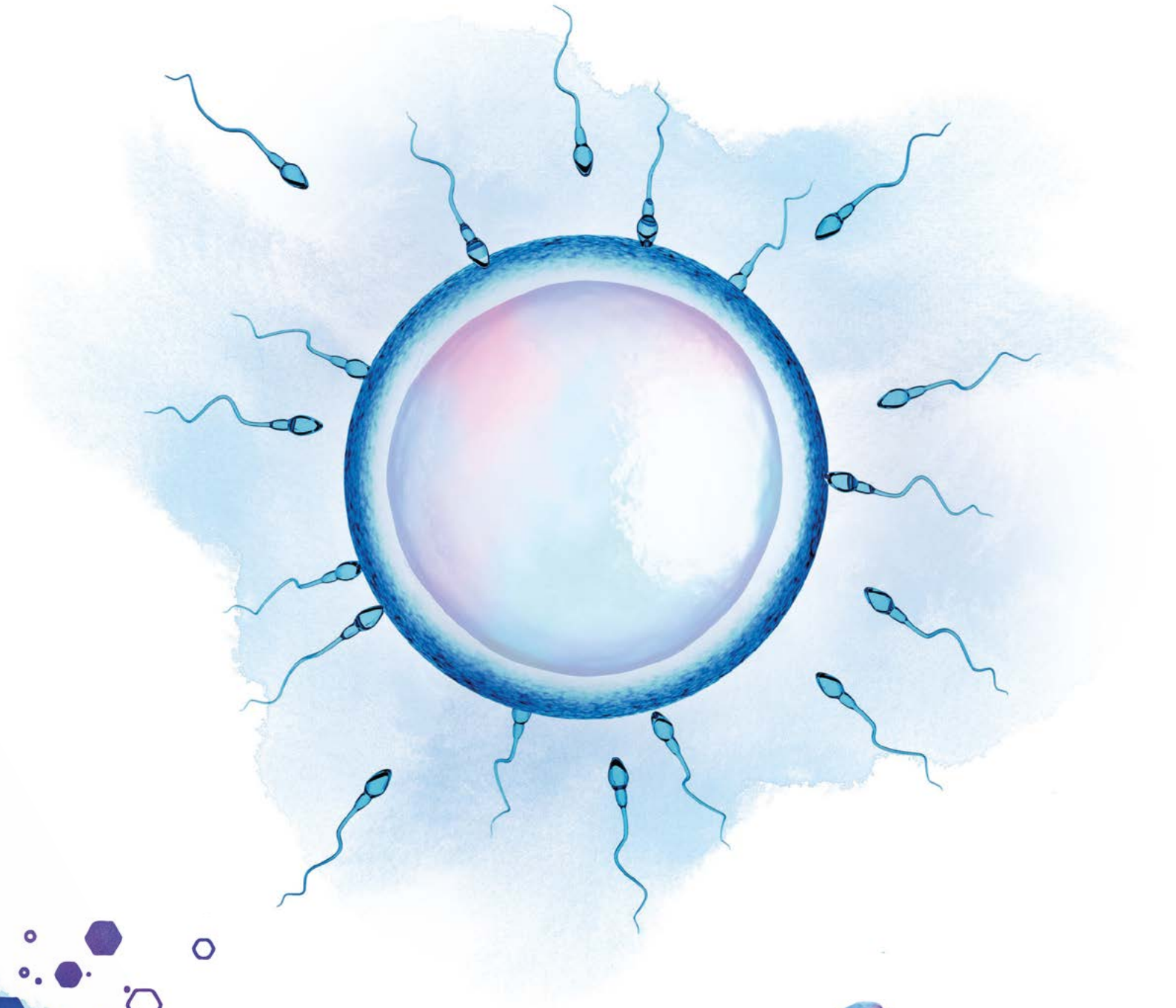
Andrology Product Guide

Products for Sperm Preparation, Selection and Cryopreservation



CooperSurgical®
Fertility Solutions

Media for Sperm Preparation

ORIGIO® Gradients and ORIGIO® Sperm Wash Media

Innovative formulations, drawing on the latest scientific knowledge of sperm function

- High concentration of bicarbonate to stimulate sperm progressive motility[1,2]
- pH 8.0-8.5 to mimic *in vivo* physiological conditions[3]
- High HSA concentration to support optimal sperm function[4]
- Antioxidants – EDTA, citrate and taurine – added to protect spermatozoa from oxidative damage[5,6,7]
- HEPES buffered to use outside a CO_2 controlled environment. Requires no pre-equilibration
- Osmolality differentiated through gradient layers to protect sperm from osmotic damage during isolation[8]
- Can be used for IUI, IVF, and ICSI
- Shelf life after opening: 28 days

ORIGIO® Sperm Wash Media

For washing of sperm, isolation of motile viable sperm by swim-up method, dilution of ORIGIO® Gradients, and use as a holding medium for sperm prior to IUI

Composition

Calcium chloride, EDTA, Gentamicin sulphate 10 µg/mL, Glucose, Human serum albumin 10 mg/mL, HEPES, Magnesium sulphate, Potassium chloride, Pyruvate, Sodium bicarbonate, Sodium citrate, Sodium chloride, Sodium phosphate monobasic, Taurine.

Order code(s)

Item #	Product name	Volume
84050060	ORIGIO Sperm Wash	60mL
84055060	ORIGIO Sperm Wash	5 x 60mL
84051010	ORIGIO Sperm Wash	10 x 10mL

ORIGIO® Gradients

For the efficient separation of motile sperm from the ejaculate by the density gradient method

Composition

Calcium chloride, EDTA, Gentamicin sulphate*10 µg/mL, Glucose, Human serum albumin*5 mg/mL, HEPES, Magnesium sulphate, Potassium chloride, Pyruvate, Silane-coated silica particles, Sodium bicarbonate, Sodium citrate, Sodium chloride, Sodium phosphate monobasic, Taurine.

Order code(s)

Item #	Product name	Volume
84000060	ORIGIO Gradient™ 100	60mL
84002060	ORIGIO Gradient™ 100	2 x 60mL
84004125	ORIGIO Gradient™ 100	4 x 125mL
84010060	ORIGIO Gradient™ 90	60mL
84022060	ORIGIO Gradient™ 40/80	2 x 60mL
84022010	ORIGIO Gradient™ 40/80	2 x 10mL
84021210	ORIGIO Gradient™ 40/80	12 x 10mL

*except for 8400 ORIGIO Gradient 100

Sperm Selection and Assessment

Sperm selection for ICSI

Hyaluronan-based sperm selection is used to pick up mature competent spermatozoa for ICSI. Hyaluronan is a natural substance found in the cumulus complex surrounding the oocyte and the ability of sperm cells to bind to hyaluronan is an important biomarker for sperm quality. Only fully mature sperm that have completed the last crucial stages of spermatogenesis have developed receptors for hyaluronan and can bind to it, while immature spermatozoa cannot.[9]

Sperm selection with hyaluronan is often called "physiologic ICSI," emphasizing the fact that spermatozoa are not being picked based on their morphology and motility only but selected according to naturally occurring mechanisms. While picking up spermatozoa bound to hyaluronan, embryologists can select mature ones with better DNA integrity.[10]

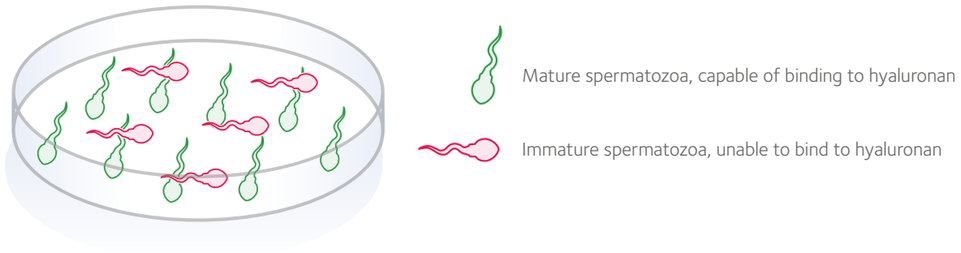
The ability of sperm to bind to hyaluronan correlates to:

- better DNA integrity[11,12]
- lower DNA fragmentation rates[11,12]
- proper DNA packaging[11]
- lower aneuploidy rates[11]

It has been shown that sperm selection with hyaluronan

- significantly decreases miscarriage rates[13,14]
- improves live birth outcomes among older couples[12]
- provides better treatment outcomes after previously failed standard ICSI cycles[15]

Example



You can pick up mature, hyaluronan-bound spermatozoa for ICSI using either SpermSlow™ medium – hyaluronan-based media for slowing down and selection of spermatozoa, or PICSI® dishes – dishes for ICSI with a hyaluronan coating.

HBA™ Assay

The HBA™ Assay is a diagnostic tool with dual hyaluronan-coated chambers for sperm sample evaluation

The HBA Assay allows you to distinguish between mature sperm that express hyaluronan receptors and those that do not. The proportion of sperm with receptors is called Hyaluronan Binding index or HBA index.

Sperm sample evaluation using HBA Assay takes minutes and might be used to provide more insights about male fertility and to formulate a proper treatment strategy for a couple.[13] There are data showing a correlation of the HBA index with treatment outcomes.[13,16,17]

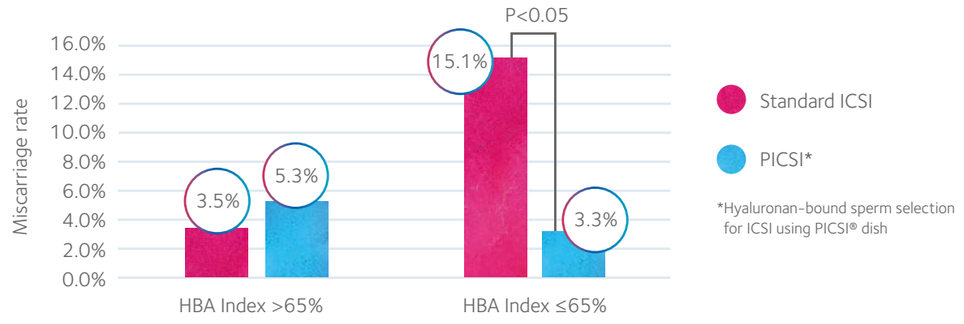
It was shown in a multicenter randomized trial that in couples where ≤65% of sperm bound to hyaluronan, the selection of hyaluronan-bound sperm for ICSI led to a statistically significant reduction in pregnancy loss rate compared to conventional ICSI.[13]

Order code(s)

Item #	Product name
BCT-HBA-10	HBA® slide: Package of 10 assays

The HBA Assay can be used as a component of analyses of either raw or processed semen for determining the proper course of IVF treatment of infertility.

Outcome of a randomized controlled study, carried out in 10 IVF clinics in USA[13]



Selection of hyaluronan-bound spermatozoa with PICSI® dish significantly decreases miscarriage rate compared to standard ICSI if HBA index is ≤ 65%

SpermSlow™ Medium

For slowing down the movement of sperm to allow for the selection of the most mature, viable spermatozoa for ICSI

A semi-viscous medium containing hyaluronan for sperm selection and immobilization for ICSI. Allows for performing ICSI without PVP.

It was demonstrated that hyaluronan-based sperm selection using SpermSlow™ allowed for better embryo quality and implantation rate compared to conventional ICSI.[9]

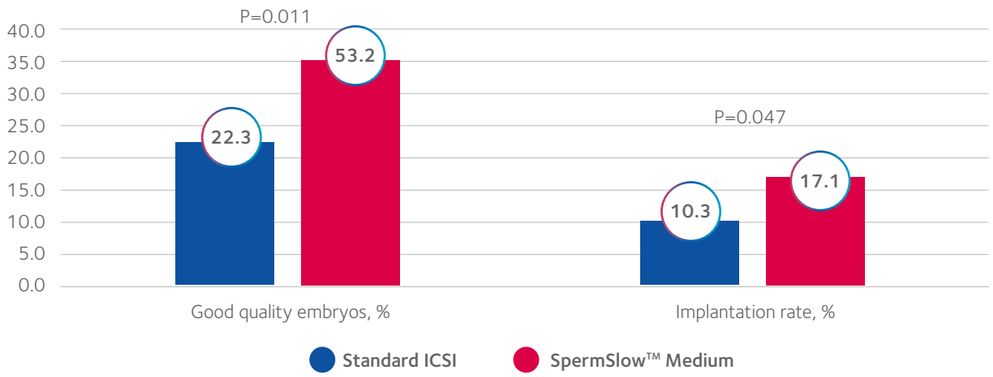
Composition

Adenine, Alanine, Arginine, Ascorbic acid, Asparagine, Aspartic acid, Calcium chloride, Calcium lactate, Calcium pantothenate, Cholesterol, Choline chloride, Cysteine, Cytosine, D-Biotin, Disodium hydrogen phosphate, Folic acid, Gentamicin sulphate, Glutamic acid, Glucose, Glutamine, Glycine, Guanine, Histidine, Human albumin solution, Hyaluronate, Hydrochloric acid, Hypotaurine, Inositol, Isoleucine, Leucine, L-Malic acid, Lysine, Magnesium sulfate, Methionine, Phenylalanine, Potassium chloride, Potassium phosphate monobasic, Proline, Pyridoxine, Riboflavin, Recombinant human insulin, Serine, Sodium acetate, Sodium bicarbonate, Sodium chloride, Sodium phosphate monobasic, Sodium pyruvate, Sodium citrate, Taurine, Thiamine, Threonine, Thymine, Tryptophan, Tyrosine, Uracil, Valine, Vitamin B12

Order code(s)

Item #	Product name	Volume
10944000	SpermSlow™	4 x 0.1 mL

Data from a retrospective study on 379 couples comparing the outcome of conventional ICSI with hyaluronan-based sperm selection[9]



Sperm selection with SpermSlow™ media helps to improve the embryo quality and the implantation rate compared to standard ICSI[9]

PICSI® Dish

The PICSI® Dish is a dish for ICSI with hyaluronan microdots, allowing for the selection of mature sperm during ICSI procedure

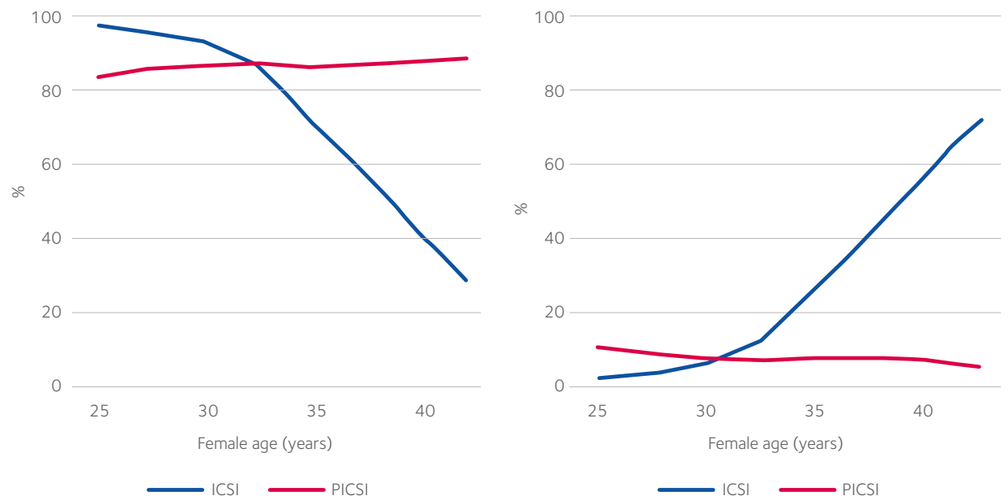
It was demonstrated in a randomized controlled multicenter study, that sperm selection using PICSI® dish helps to mitigate the poor prognosis usually ascribed to "advanced maternal age" compared to standard ICSI.[12]

Order code(s)

Item #	Product name
BCT-PICSI-20	20 PICSI dishes, individually packaged, sterile

PICSI® dishes are indicated for the selection of mature sperm in the treatment of infertile couples by ICSI.

Modeled and predicted live birth rate and miscarriage rate with female age following standard ICSI or ICSI using PICSI® Dish[12]



Data from HABSelect - a randomized controlled trial on 2752 patients from 16 clinics in the UK

The PICSI® dish helps to mitigate negative effect of advanced maternal age on live birth and miscarriage rates

PVP Media

7% and 10% polyvinylpyrrolidone solutions for slowing down the movement of the spermatozoa for ICSI

Item #	Product name	Volume	Composition
ART-4005	7% PVP Ready-to-Use solution	6 x 0.5 mL	Calcium chloride, Dextrose, EDTA, Gentamicin sulfate, HEPES, Human serum albumin, L-Alanyl-L-Glutamine, Magnesium sulfate, Phenol red, Polyvinylpyrrolidone, Potassium chloride, Potassium phosphate monobasic, Sodium bicarbonate, Sodium chloride, Sodium lactate, Sodium hydroxide, Sodium pyruvate, Taurine
10905000	10% PVP Clinical Grade, without phenol red	5 x 0.2 mL	Calcium chloride, Gentamicin sulphate, Glucose, HEPES, Human albumin solution, Magnesium sulfate, Potassium chloride, PVP (polyvinylpyrrolidone), Sodium bicarbonate, Sodium chloride, Sodium phosphate monobasic, Sodium pyruvate, SSR® (Synthetic Serum Replacement)
10890001	10% PVP Medium, with phenol red	1 mL	Calcium chloride, Gentamicin sulphate, Glucose, HEPES, Human albumin solution, Magnesium sulfate, Phenol red, Potassium chloride, PVP (polyvinylpyrrolidone), Sodium bicarbonate, Sodium chloride, Sodium phosphate monobasic, Sodium pyruvate, SSR® (Synthetic Serum Replacement)

Media for Sperm Cryopreservation

For freezing of human spermatozoa

Sperm Freezing Medium

- Contains glycerol and sucrose as the cryoprotective agents
- Glycine and human serum albumin added to support sperm motility and function[4,18]

Composition

Calcium chloride, Gentamicin sulphate, Glucose, Glycerol, Glycine, HEPES, Human albumin solution, Magnesium Chloride, Potassium chloride, Sodium bicarbonate, Sodium chloride, Sodium lactate, Sodium phosphate monobasic, SSR® (synthetic serum replacement), Sucrose

Item #	Product name	Volume
10670010	Sperm Freezing Medium	10 mL

CryoSperm™ Medium

- Contains glycerol and raffinose as cryoprotectants
- HSA-free sperm freezing, without proteins and other components of animal origin
- Glutamine, Glycine and Taurine are added to support sperm motility and protect spermatozoa during freezing and thawing[18, 19, 20]

Composition

Gentamicin sulphate, Glucose, Glutamine, Glycerol, Glycine, HEPES, Magnesium sulfate, Potassium chloride, Raffinose, Sodium bicarbonate, Sodium chloride, Sodium lactate, Sodium phosphate monobasic, Sodium pyruvate, Taurine

Item #	Product name	Volume
11010010	Sperm Freezing Medium	10 mL

Quinn's Advantage™ Sperm Freezing Medium

- Contains glycerol and sucrose as the cryoprotective agents
- With Glutamine, EDTA and HSA to support sperm motility and functions[4,19,21]

Composition

Calcium chloride, Dextrose, EDTA, Gentamicin sulphate, Glutamine, Glycerol, HEPES, Human serum albumin, Magnesium sulfate, Phenol red, Potassium chloride, Potassium phosphate monobasic, Sodium bicarbonate, Sodium chloride, Sodium Lactate, Sodium pyruvate, Sucrose

Item #	Product name	Volume
ART-8022	Quinn's Advantage™ Sperm Freezing Medium	6×12mL

ScanFuge™ Centrifuges

Low-speed customizable centrifuges

ScanFuge™ Midi

Key features

- A unique autoclavable rotor centrifuge
- Fixed angle rotor 6 x 15mL tubes
- Adaptors available for 3mL to 5mL
- Digital display setting: RPM/RCF and run-time with count down
- Automatic door release and alarms for imbalance, overheating and over speed

Product specifications

Maximum speed: 4000RPM
Maximum RCF x g: 2075
Maximum Capacity: 6 x 15ml Fixed
Run-time: 99 min 59 sec or continuous
Acceleration time: ≤ 20 sec
Deceleration time: ≤ 20 sec
Program memory: 10
Dimensions (WxDxH): 296 x 412 x 206mm
Weight: 17.5kg (net) 18.7kg (gross)

ScanFuge™ Maxi

Key features

- A unique configurable centrifuge with fixed-angle and swing-out bucket rotor
- Choice of different rotors, buckets, and adaptors to suit the specific application or needs e.g., Swing out bucket rotor (100mL or 50mL tubes) or Fixed angle rotor (16x15mL tubes)
- A "Soft" start/stop function: gentle acceleration and deceleration
- Digital display setting of speeds and run times

Product Specifications

Maximum speed: 4000RPM
Maximum RCF x g: 2826
Maximum capacity: 16 x 15ml to 4 x 100ml
Run-time: 99 min 59 sec or continuous
Acceleration time: ≤ 20 sec
Deceleration time: ≤ 20 sec
Program memory: 10
Dimensions (W x D x H): 375 x 480 x 260mm
Weight: 23kg (net) 26kg (gross)

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