PRODUCT CATALOGUE

CARIAD

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CARIAD

Andrology, Reproduction, IVF.

ABOUT CARIAD

Founded in 2019, CARIAD was established in response to the significant global challenge of declining birth rates and the need for advancements in reproductive medicine healthcare. Our inception is a commitment to the vital field of reproductive health, addressing needs that affect societies at their core.

Located in Zhuhai, China, CARIAD has quickly become a key player in the global reproductive medicine arena. Our product range, including Andrology diagnostic reagents, flow cytometry, biochemistry, and chemiluminescence products, is the result of meticulous research and development. Our 23,000 m^2 facility, equipped with a GMP-compliant laboratory and a 4,400 m^2 reagent production area, is at the forefront of innovation in our field.

The heart of our innovation lies in our national-level joint engineering laboratory, recognized by the government. Here, we focus on creating advanced technologies that are crucial in reproductive medicine.

Quality is a cornerstone of our operations, as evidenced by our TÜV SÜD ISO13485 certification and adherence to international standards including CE IVDR, IVDD, FDA, and NMPA approvals.

Our mission is straightforward: to excel in the field of reproductive medicine, combining innovation and reliability. CARIAD is committed to making a significant impact in improving reproductive health globally.

TÜV SÜD CE FDA NMPA

CONTENTS

Practical Application of Seminal Plasma Biochemical Assay

Male semen is composed of **sperm (5%)** and **seminal plasma (95%)**, akin to fish and water, where sperm symbolizes the fish and seminal plasma symbolizes the water. The water's quality directly impacts the fish's survival, just as the quality of seminal plasma significantly influences sperm motility and fertility.

Clinical Significance		
Seminal vesicles	Fructose	Main energy source for sperm, low levels can indicate blockages or issues with these glands
Prostate gland	Zinc	A vital role in maintaining sperm nuclear stability, low levels of zinc are associated with reduced fertility, poor sperm quality, and can affect the ability of the sperm to fertilize an egg
	Citric acid	Balances semen pH and osmotic balance and its involvement in semen liquefaction
	Acid phosphatase	It can participate in maintaining the osmotic pressure of seminal plasma which is related to sperm survival. It also plays a vital role in semen coagulation and liquefaction and sperm motility
Epididymis	Carnitine	Low levels can indicate disturbed emission of fluid through the Wolffian ducts (vas deferens & ejaculatory ducts) which can be caused by neuromuscular impairment or obstruction
	Neutral α-glucosidase	Low levels can indicate epididymal blockage or dysfunction, which can lead to issues with sperm maturation and transport
	Total α-glucosidase	The Total α-glucosidase levels in seminal plasma, derived from the epididymis and prostate gland, are key indicators of epididymal function
Inflammation	Elastase	Primarily associate with leukocytes (white blood cells), essential for diagnosing and managing inflammatory-related fertility issues
Testes	LDH-X	It correlates with important variables such as total sperm count and sperm motility, vitality, and hypotonic swelling tests

Applications

Fertility Evaluation

Routine preconception health check-ups •
Sperm quality analysis is normal but infertile •
Patients with abnormal sperm quality •

Sperm Evaluation

Artificial insemination •
Sperm bank •

Scientific Research & Forensic

Family planning research •
Forensic medical examination •

Disease Diagnosis

- Inflammatory infections such as prostatitis, epididymitis, and seminal vesiculates
- Obstruction site diagnosis for azoospermia patients
- Oligospermia, asthenospermia, azoospermia and teratospermia patients

ART

- ART solution decision

Efficacy Observation

- Post-vasectomy
- Medication testing for prostatitis

Diagnosis of Andrological Disorders by Differential Ejaculate Biochemistry

Region of tract /issue	Ejaculate volume	Fructose (seminal vesicles)	Acid phosphatase (prostate)	Citric acid (prostate)	Neutral α-glucosidase (epididymis)	Zinc (prostate)
Epididymis: bilateral obstruction	○	○	○	○	↓	○
Vasa deferentia: agenesis	↓	X	↑	↑	↓	○ / ↑
Ejaculatory ducts: obstruction	↓	X	↑	↑	↓	○ / ↑
Prostate: infection / inflammation	○	○	↓	↓	○	↓
Prostato-vesiculitis	↓	↓	↓	↓	○	↓

Note: ○ stands for "Normal","X"stands for "Absent"

SEA-20

Seminal Plasma

Fully Automated Analyzer

SEA-20 is a rapid in vitro diagnostic analyzer for the quantitative determination of Seminal Plasma biomarkers. Seminal plasma analysis often requires timely results for diagnostic and fertility assessments. SEA-20 can deliver multiple results in just 12 minutes, eliminating the need for sending samples to off-site laboratories as well as free Andrologist from complicated manual tests.

- Innovative Microfluidic Technology
- Multiple parameters in 12 minutes
- 3-step operation
- No need calibration

Test Cartridges

	Fructose	Zinc	Citric Acid	Neutral α-glucosidase
SP3	—	—		—
SP33	—	—	—	
SP4	—	—	—	—

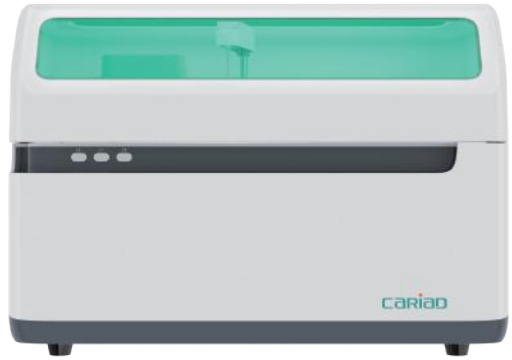
BLA-360

Seminal Plasma

Full Automated Chemistry Analyzer

BLA-360 is a fully automated high accuracy seminal plasma analyzer, with the throughput of 360 tests per hour which is dedicated for high volume diagnosis.

- Original Quality Control & Calibrators
- Liquid level detection
- Collision avoiding
- Liquid volume monitoring
- Holographic diffraction grating technology
- CV≤5%



Reagents

100 tests/ kit

- Fructose
- Zinc
- Citric Acid
- Carnitine
- Elastase
- LDH-X
- Neutral α-glucosidase
- Total α-glucosidase
- Acid Phosphatase

Specifications

- Throughput: 360 T/H
- Measuring Principle: Spectrophotometry
- Temperature accuracy: ± 0.1℃
- 12 steps wavelength: 340-800 nm
- Sample Types: Seminal Plasma
- Sample Volume: 2.0-30.0 μL
- Dimensions: 720×540×505 mm (W×D×H)
- Weight: 57 kg

CLA-800

POCT CLIA System

The CLA-800, a compact and fully automated chemiluminescence immunoassay analyzer (CLIA), is designed for simplicity and efficiency in reproductive health diagnostics. Its all-in-one single test cartridge design is ideal for both professionals and non-specialists, ensuring easy operation in reproductive testing.

Cartridge
All-in-one single test design

3-step Operation


Loading cartridge


Sampling


Analyzing

Specifications

- Instrument type: Chemiluminescence Immunoassay Analyzer
- Interface: USB x 2, RJ45 x 1
- Calibration: 2-point calibration
- Sample Type: Human serum and plasma
- Barcode scanner: Built-in barcode scanner
- Printer: Built-in thermal printer
- Sample volume: 100-150 µL
- Dimensions: 225×400×260 mm (W×D×H)
- Weight: 13.7 kg

Test Menu (For CLA-800 & CLA-120)

AMH	INH B	PRL	ZPAb-IgG
Prog	β-HCG	E2	ASAb-IgG
LH	Testo	FSH	AOAb-IgG
EMAb-IgG	Anti-TAAb	HCGAb-IgG	

Package 20 tests/kit — CLA-800
100 tests/kit — CLA-120

CLA-120

Full Automated Chemiluminescence Immunoassay System

Offering rapid, accurate testing with a capacity of 120 tests per hour, it's ideal for hormone analysis and reproductive medicine diagnostics. With its user-friendly interface and space-efficient design, the CLA-120 streamlines laboratory workflows, ensuring high-quality, reliable results.

Specifications

- Measuring Principle: Acridinium ester direct chemiluminescence
- Throughput: 120 T/H
- Time to First Result: ⩽15 minutes
- Walk Away Capacity: 3 hours
- Sampling Volume: 10-150 µL
- Sample Capacity: 30 positions
- Reagent Capacity: 10 positions
- Dimensions: 433×679×638 mm (W×D×H)
- Weight: 62 kg

CFA-108

POCT Flow Cytometer

Andrology Dedicated

Flow Cytometer is a crucial instrument for cell analysis, proving particularly valuable in the field of sperm diagnostics. The CFA-108, a specialized flow cytometer designed explicitly for Andrology, stands out with its intelligent, compact design and high sensitivity. Its user-friendly operation is further enhanced by a unique, single-use, all-in-one cartridge system, streamlining the process for ease of use.

- Intelligent
- Compact
- High Sensitivity
- All-in-One Cartridge

Test Menu

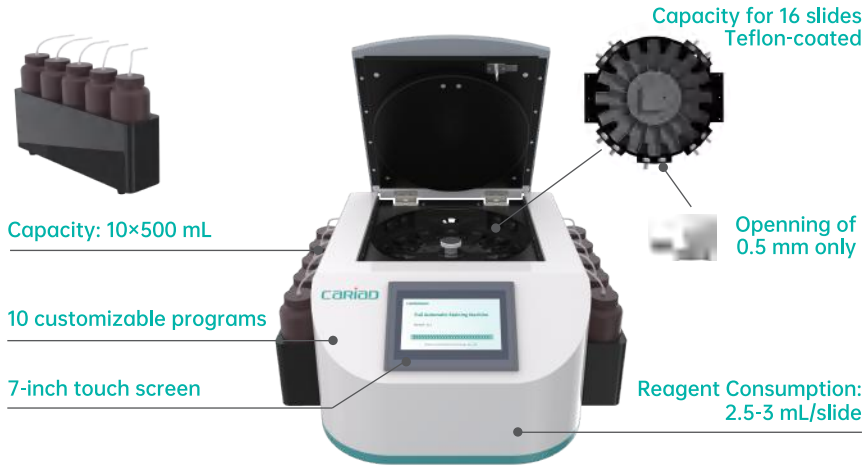
20 / 40 / 50 tests/kit

Sperm DNA Fragmentation (SCSA)	Antisperm MAR Test IgA & IgG
Semen Leukocyte Staining	Sperm Reactive Oxygen Species Staining
Sperm Acrosome Reaction Staining	Sperm Mitochondrial Membrane Staining
Sperm Acrosome Staining	Sperm Plasma Membrane Staining
Sperm Membrane Surface Antibodies IgA & IgG (Fluorescent Staining)	

RS-162

Full Automatic Sperm Staining Machine

The RS-162 is a versatile fully automated sperm staining machine, able to handle 16 slides simultaneously and offering 10 customizable staining programs. This efficiency enhances laboratory productivity, reduces labor costs, and improves staining accuracy in reproductive medicine.



Specifications

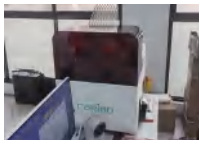
- Staining Method: Injection
- Staining Program: Up to 10 customizable staining programs; defaults: Papanicolaou, Modified Papanicolaou and Diff-Quik
- Staining Carousel: Single layer, teflon-coated, individual slide positions, avoid cross-contamination
- Staining Capacity: 16 slides
- Reagent Capacity: 10 reagent bottles (10 × 500 mL)
- Centrifugal Speed: 100-300 rpm, adjustable
- Maintenance: Auto-checking of reagents and waste liquid volume when starts up Auto-cleaning when shuts down
- Safety: Lid interlock; ensure it's locked down during operation
- Dimensions: 560×450×282 mm (W×D×H)
- Weight: 20.5 kg

M1000

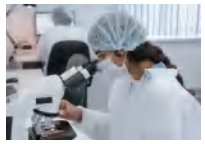
Automated Blood Collection Tube Labeling System

M1000 is an automated and independent blood collection tube labeling system, integrating intelligent tube selection, label printing, label sticking, and verification. It is designed to work in all types of blood collection stations, such as in outpatient departments, wards, clinica laboratories, etc..

Applications


Outpatient department


Ward


Clinical laboratory


Nursing station

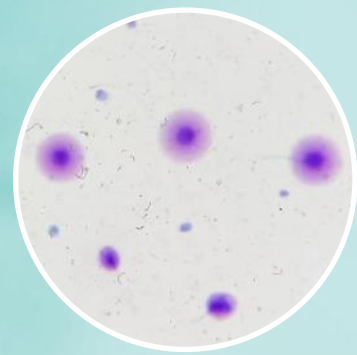
Specifications

- Tube Feeding: Manipulator
- Tube Types: 12-15 mm in diameter, 50-100 mm in length
- Label Spec.: 75x30 mm, 50x30 mm, 50x25 mm, 30x25 mm, 30x20 mm, more specifications can be customized
- Integration: HL7 protocol, supports HIS and LIS
- Dimensions: 520×440×380 mm (W×D×H)
- Weight: 35 kg

Sperm DNA Fragmentation Detection Kit (SCD Assay)

Sperm DNA fragmentation is a condition that affects male fertility. It refers to the presence of sperm with damaged (broken) DNA. Alterations of any kind in sperm DNA are likely to cause infertility in the man affected, as integrity of sperm DNA is key to obtaining viable embryos and subsequently a healthy baby. Sperm DNA fragmentation (SDF) is associated with male infertility, and it adversely affects reproductive outcomes. Both chromatin integrity and protamination status determine the extent of DNA damage.

Reaction Time



Package	10 tests/kit or 20 tests/kit
Shelf Life	12 months – Before opening
	90 days – After opening
Storing Environment	2-8 ℃

Sperm Nuclear Staining Solution (Acridine Orange Method)

Sperm Acridine Orange (AO) Test is for sperm chromatin denaturation detection.

It measures the ability of sperm nuclear DNA to denature by acid which forms metachromatic shift of AO fluorescence from green (native DNA) to red (denatured DNA), which reflects the level of DNA fragmentation.

Content	
Staining buffer	Citric acid
Fixation solution	HCL
AO stock solution	Acridine orange
Storing Environment	2-8 ℃
Shelf Life	12 months – Before opening
	30 days – After opening
Package	20 tests/kit

Staining Solution for the Maturity of Spermatozoan Nucleoprotein (Aniline Blue-Eosin Staining)

It is to assess sperm chromatin structure and maturity, specifically to distinguish between immature and mature spermatozoa based on the staining of their nuclear proteins.

During spermatogenesis, sperm chromatin undergoes structural changes and results in a high condensation. This nuclear compaction would be useful as a predictor of sperm fertilization capacity and pregnancy outcome.

Adding eosin counterstain to aniline blue enhances the assessment of chromatin condensation, providing a modified and improved version of the traditional aniline blue assay.

Content	
Concentrated washing solution	Sodium dihydrogen phosphate
Adhesive fluid	Gelatin
Fixation solution	Methanol
Staining solution	Aniline blue
Concentrated eluate	Sodium chloride
Counterstain	Eosin Y
Customized slides	10 pcs/kit
Storing Environment	2-8 ℃
Shelf Life	12 months – Before opening
	15 days – After opening
Package	20 tests/kit

Hyaluronan Binding Assay (HBA)

The Hyaluronan Binding Assay (HBA) is a diagnostic test that evaluates sperm quality and its ability to bind to hyaluronan, a substance in the zona pellucida surrounding the egg.

This binding is crucial for fertilization and indicates sperm maturity, viability, and potential for successful fertilization.

Content	
Coated Glass Slides	Hyaluronic acid
Storing Environment	2-8 ℃
Shelf Life	24 months – Before opening
	60 days – After opening
Package	20 tests/kit

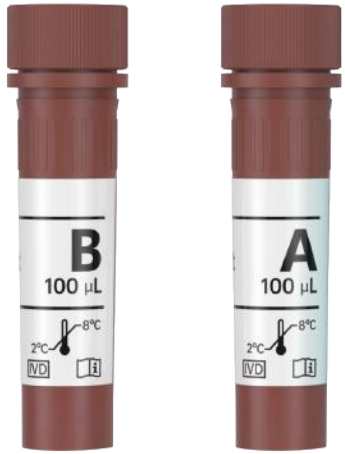
Semen Leukocyte Staining Solution (Peroxidase assay)

To identify leukocytes (white blood cells) in semen, indicating potential infection or inflammation in the male reproductive tract, which can impact fertility.

Increased Leukocyte levels suggest infections such as prostatitis or epididymitis; leukocytes also generate reactive oxygen species that damage sperm, reducing motility and fertilization capabilities.

Content	
Chromogen solution A	Benzidine
Chromogen solution B	Hydrogen peroxide
Storing Environment	2-8 ℃
Shelf Life	12 months – Before opening
	30 days – After opening
Package	20 tests/kit

Antisperm MAR Test IgA / IgG



It detects antisperm antibodies in semen, which can immobilize or agglutinate sperm, hindering fertilization and identifying immunological causes of infertility.

It is crucial in guiding fertility treatments and assisting reproductive techniques like IUI or IVF when natural conception is challenging.

Content	
Reagent A	Microspheres coated with antibodies
Reagent B	Serum contain anti-human antibodies
Storing Environment	2-8 ℃
Shelf Life	12 months – Before opening
	30 days – After opening
Package	20 tests/kit

Sperm Vitality Staining Solution (Eosin-Nigrosin Staining)

A motile sperm is considered alive, but immotile sperm can also be alive. The 6th (2021) edition of the WHO Laboratory Manual recommends sperm vitality assessment if total motility is less than 40%.

Identifying live but immotile sperm requires additional techniques and the Eosin-Nigrosin stain simplifies this process with fewer steps, fewer fields, and no need for negative phase-contrast optics, making it ideal for standardizing and managing quality in basic semen analysis.

Content	
Staining solution	Eosin Y and Nigrosin Solution X 2
Storing Environment	2-8 ℃
Shelf Life	12 months – Before opening
	30 days – After opening
Package	40 tests/kit

Sperm Membrane Detection Kit (Hypo-osmotic Swelling Test)

Sperm survival can be assessed by testing the integrity of the sperm membrane.

It involves observing how sperm tails swell in a hypo-osmotic solution, which reflects the physiological functions of the sperm membrane. These functions are related to sperm energy metabolism, fertilization, capacitation, acrosome reaction, and the fusion between sperm and the egg membrane. The sperm tail is the organ responsible for movement; after being ejaculated into the vagina, the sperm must travel through the cervix and uterus to reach and fertilize the egg in the fallopian tubes, requiring a functional sperm tail.

In a hypo-osmotic solution, water molecules enter the sperm, causing it to swell, which is particularly evident in the tails of normal sperm, while sperm with damaged or non-intact membranes typically do not swell.

Content	
Hypotonic swelling solution	Fructose, Sodium citrate
Storing Environment	2-8 ℃
Shelf Life	12 months – Before opening
	15 days – After opening
Package	20 tests/kit

Semen Liquefaction Kit (Enzyme Digestion Method)

This product aids in pretreating semen specimens with slow or no liquefaction, reducing viscosity and preparing them for semen analysis.

Semen liquefaction is a proteolytic process where a gel-like ejaculated semen becomes watery due to the enzymatic activity of prostate-derived serine proteases in the female reproductive tract; normally, semen liquefies within ~15 to 20 minutes post-ejaculation; if it remains unchanged after 1 hour, it may be abnormal.

Content	
Lyophilized powder	Chymotrypsin
Storing Environment	2-8 ℃
Shelf Life	12 months – Before opening
	15 days – After opening
Package	2 vials/kit

Seminal Plasma Zinc Detection Kit (5-Br-PAPS)

Seminal plasma zinc impacting sperm quality, hormone regulation, and prostate health. Zinc helps protect sperm, influences testosterone production, and supports prostate function. Low zinc levels can affect fertility and overall reproductive function.

Content	
Reagent A	Carbonate buffer of 5-Br-PAPS
Reagent B	Thiourea, Sodium chloride
Zinc Standard	Zinc oxide
Storing Environment	2-8 ℃
Shelf Life	12 months – Before opening
	15 days – After opening
Package	20 tests/kit

Seminal Plasma Fructose Detection Kit (Indole Method)

Seminal plasma fructose is essential for providing energy to sperm, crucial for motility and successful fertilization. It's primarily produced by the seminal vesicles, and its levels are used to assess these glands' health and function. Low fructose levels in semen can indicate issues with seminal vesicles, potentially affecting fertility.

Content	
Deproteinizing solution	Zinc sulfate
Alkaline solution	Sodium hydroxide
Fructose standard	Fructose
Chromogenic solution	Indole
Buffer	Glycerol
Storing Environment	2-8 ℃
Shelf Life	12 months – Before opening
	15 days – After opening
Package	20 tests/kit

Seminal Plasma Citric Acid Detection Kit (Enzymatic Method)

Seminal plasma citric acid, mainly produced by the prostate gland, helps maintain semen pH, crucial for sperm health and viability. Its levels can indicate prostate health, affecting fertility.

Content	
Coupling buffer	Phenylhydrazine hydrochloride
Buffer	Bis-Tris buffer
Citrate standard	Citrate
Enzyme lyophilized powder	Citrate lyase
Storing Environment	2-8 ℃
Shelf Life	12 months – Before opening
	30 days – After opening
Package	40 tests/kit

Seminal Plasma Acid Phosphatase Detection Kit (P-nitrophenol Method)

Seminal plasma acid phosphatase, produced by the prostate gland, is essential for semen liquefaction and sperm mobility. Increased levels can indicate prostate issues, affecting fertility.

Content	
ACP store solution	Sodium bisfulate
Sample buffer	Citric acid
Stop solution	Sodium hydroxide
Standard	PNP (4 vials)
Subtrate	PNP (3 tablets)
Storing Environment	2-8 ℃
Shelf Life	12 months – Before opening
	15 days – After opening
Package	20 tests/kit

Diff-Quik Sperm Staining Solution

Faster and simpler but with less details compares with Papanicolaou

Content	
Liquid A	Triarylmethane dye
Liquid B	Eosinophilic xanthene
Liquid C	Thiazine dye mixture
Storing Environment	Room temperature
Shelf Life	12 months – Before opening
	3 months – After opening
Package	100 mL x 3、500 mL x 3

Papanicolaou Sperm Staining Solution

World Health Organization recommended sperm morphology staining solution with distinct feature

Content	
Liquid A	Hematoxylin staining liquid
Liquid B	EA50 staining liquid
Liquid C	Orange G staining liquid
Liquid D	Lithium carbonate solution
Liquid E	Hydrochloric acid solution
Storing Environment	Room temperature
Shelf Life	12 months – Before opening
	30 days – After opening
Package	500 mL x 5

Modified Papanicolaou Sperm Staining Solution

An alternative to the traditional Papanicolaou method, it yields consistent results in just 15 minutes

Content	
Liquid A	Hematoxylin
Liquid B	Hydrochloric acid
Liquid C	Brilliant green & Eosin
Storing Environment	4-30 ℃
Shelf Life	12 months – Before opening
	3 months – After opening
Package	50 mL x 3、500 mL x 3