

FEB 28 2000

**510(k) Summary  
Summary of Safety and Effectiveness Information  
Supporting a Substantially Equivalent Determination  
(K991333)**

**The product**

- "Medi-Cult Sperm Freeze Medium" Cat.No. 1067

**Indications for use:**

"Medi-Cult Sperm Freeze Medium" is intended for the cryopreservation of human spermatozoa and tissue from testicular biopsies.

**The product formulation:**

Modified Tyrodes with HEPES buffer containing sucrose, glucose and sodium lactate  
Assisted Reproduction Technique Supplement, (ARTS)

Glycerol

Human Serum Albumin (HSA)

Penicillin

Streptomycin

**The product testing control contents:**

- Bioburden, production-test
- Integrity filter testing, production-test
- Sterility, QC-test
- pH, QC-test
- Endotoxin, QC-test
- Sperm Survival, QC-test

The culture media from Medi-Cult have been used by many European IVF-units since the end of the 1980's. (Produced and distributed by GEA-Biotech 1987 to 1989 and by Medi-Cult a/s from 1989). The Medi-Cult media were at that time introduced as a replacement for in-house prepared culture media.

The Medi-Cult products for cryopreservation is in general formulated according to data published in peer reviewed international journals by internationally recognised scientists in the field.

Medi-Cult has recently introduced a medium for the cryopreservation of human spermatozoa. Medi-Cult Sperm Freezing Medium (SFM) is composed from a modified Tyrodes Solution that has been Hepes buffered. The cryoprotective is Glycerol (15% v/v) and its cryoprotective properties have been enhanced by the addition of Assisted Reproduction Technique Supplement (ARTS) and human serum albumin.

The product contains small amounts of potentially hazardous Human Serum Albumin, which has been obtained from a U.S licensed source (U.S license No.140). It origins from larger pools of screened healthy donors, tested negative for HBsAg, Anti-HCV, anti HIV-1/2. Levels of ALT (GPT) in the plasma are determined and donations are rejected if the values found are above the upper limit of the specifications. Donors of the source material have been screened for CJD.

At the Rochester Regional Cryobank and Andrology Laboratory, University of Rochester Medical center, Rochester, NY, the Medi-Cult Sperm Freezing medium have been compared with TEST-Yolk buffer (TYB, Irvine Scientific, Irvine CA). The following results were obtained:

	Motility %	Viability %	Normal cells %	VSL*
Fresh semen	61.1(3.6)		50.0 (6.1)	43.1 (3.1)
SFM**	20.6(2.4)	40.7(4.2)	53.8(5.1)	31.5(1.5)
TYB***	19.1 (1.0)	49.6(1.7)	49.3(5.5)	29.7(1.6)

\*VSL: straight line velocity

\*\*SFM: Sperm Freezing Medium from Medi-Cult

\*\*\*TYB: TEST-Yolk buffer from Irvine Scientific

No differences between sperm frozen with SFM or with TYB were found in this study.

Binding of the spermatozoa to the zona pellucida (ZP) is a necessary step in fertilisation both in vivo and in vitro (IVF). Freezing/thawing might have a detrimental effect on the receptors on the surface of sperm cells and thus impair binding to the zona pellucida. Dr Mary Mahoney at The Jones Institute for Reproductive Medicine, Eastern Virginia Medical School, Norfolk, USA, have evaluated the ability of frozen/thawed spermatozoa to bind to isolated zona pellucidae using the "hemi-zona assay". Sperm frozen and thawed in Medi-Cult Sperm Freezing medium and in TEST-Yolk buffer from Irvine Scientific was compared.

**Table 1. Hemi-zona assay (HZA) after freezing/thawing in Sperm Freezing Medium from Medi-Cult (SFM) or TEST-Yolk buffer from Irvine Scientific (Test-Yolk)**

HZA binding in TEST-Yolk	HZA Binding in SFM	HZA-SFM/HZA-TEST-yolk %
Mean ± SE	Mean ± SE	Mean ± SE
103.9 ± 6.0	149.0 ± 10.4*	152.3 ± 10.2

\*Significantly higher than in Test-Yolk buffer  $p < 0.0001$

Dr. Mahoney also compared other parameters such as motility, velocity (+VSL and VCL) beat amplitude (ALH) and frequency (BCF), linearity (LIN) and hyperactivation (HA) and found no differences between sperm frozen in SFM or in TEST-Yolk buffer.

There have been no registered complaints on the product and there is no evidence in the last 1.5 year that the product has been the cause of any serious adverse events in connection with its intended use.

Thus based on the Federal Register Notice (Final Rule, Vol. 63, No. 175, page 48429, September 10, 1998), "Obstetric and Gynecologic Devices; Reclassification and Classification of Medical Devices Used for In-Vitro Fertilization and Related Assisted Reproduction Procedures" effective on October 13, 1998 and the supportive clinical data we feel that the safety and effectiveness of the product for its intended use is shown in the present submission.

Prepared and Submitted by:

*Ronald G. Leonardi, Ph. D.*

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 President  
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 858-586-0751

Date

*February 18, 2018*



FEB 28 2000

Food and Drug Administration  
9200 Corporate Boulevard  
Rockville MD 20850

Medi-Cult A/S  
c/o Ronald G. Leonardi, Ph.D.  
President  
R & R Registrations  
P.O. Box 262069  
San Diego, CA 92196

Re: K991333  
Medi-Cult Sperm Freeze Medium  
Dated: December 14, 1999  
Received: December 15, 1999  
Regulatory Class: II  
21 CFR 884.6180/Procode: 85 MQL

Dear Dr. Leonardi:

We have reviewed your Section 510(k) notification of intent to market the device referenced above and we have determined the device is substantially equivalent (for the indications for use stated in the enclosure) to legally marketed predicate devices marketed in interstate commerce prior to May 28, 1976, the enactment date of the Medical Device Amendments, or to devices that have been reclassified in accordance with the provisions of the Federal Food, Drug, and Cosmetic Act (Act). You may, therefore, market the device, subject to the general controls provisions of the Act. The general controls provisions of the Act include requirements for annual registration, listing of devices, good manufacturing practice, labeling, and prohibitions against misbranding and adulteration.

If your device is classified (see above) into either class II (Special Controls) or class III (Premarket Approval), it may be subject to such additional controls. Existing major regulations affecting your device can be found in the Code of Federal Regulations, Title 21, Parts 800 to 895. A substantially equivalent determination assumes compliance with the Current Good Manufacturing Practice requirements, as set forth in the Quality System Regulation (QS) for Medical Devices: General regulation (21 CFR Part 820) and that, through periodic QS inspections, the Food and Drug Administration (FDA) will verify such assumptions. Failure to comply with the GMP regulation may result in regulatory action. In addition, FDA may publish further announcements concerning your device in the Federal Register. Please note: this response to your premarket notification submission does not affect any obligation you might have under sections 531 through 542 of the Act for devices under the Electronic Product Radiation Control provisions, or other Federal laws or regulations.

This letter will allow you to begin marketing your device as described in your 510(k) premarket notification. The FDA finding of substantial equivalence of your device to a legally marketed predicate device results in a classification for your device and thus, permits your device to proceed to the market.

If you desire specific advice for your device on our labeling regulation (21 CFR Part 801 and additionally 809.10 for in vitro diagnostic devices), please contact the Office of Compliance at (301) 594-4591. Additionally, for questions on the promotion and advertising of your device, please contact the Office of Compliance at (301) 594-4639. Also, please note the regulation entitled, "Misbranding by reference to premarket notification" (21CFR 807.97). Other general information on your responsibilities under the Act may be obtained from the Division of Small Manufacturers Assistance at its toll-free number (800) 638-2041 or (301) 443-6597 or at its internet address "<http://www.fda.gov/cdrh/dsma/dsmamain.html>".

Sincerely yours,

Daniel G. Schultz, M.D.  
Captain, USPHS  
Acting Director, Division of Reproductive,  
Abdominal, and Radiological Devices  
Office of Device Evaluation  
Center for Devices and  
Radiological Health

Enclosure(s)

510(k) Number (if known): **K991333**

Device Name: **MEDI-CULT SPERM FREEZING MEDIUM (SFM)**

**Indications for Use:**

For the cryopreservation of human spermatozoa and tissue from testicular biopsies.

(PLEASE DO NO WRITE BELOW THIS LINE – CONTINUE ON ANOTHER PAGE  
IF NEEDED)

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Concurrence of CDRH, Office of Device Evaluation (ODE)

Prescription Use              
(Per 21 CFR 801.109)

OR

Over-The-Counter Use            

(Optional Format 1-2-96)

  
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(Division Sign-Off)  
Division of Reproductive, Abdominal, ENT,  
and Radiological Devices

510(k) Number K991333