Summary of safety and clinical performance G-TL™

This Summary of Safety and Clinical Performance (SSCP) is intended to provide public access to an updated summary of the main aspects of the safety and clinical performance of the device.

The SSCP is not intended to replace the Instructions for Use (IFU) as the main document to ensure the safe use of the device, nor is it intended to provide diagnostic or therapeutic suggestions to intended users or patients.

The following information is intended for users/healthcare professionals.

1 Device Identification and general information

1.1	Device trade name	G-TL™
1.2	Manufacturer's name and address	Vitrolife Sweden AB, Gustaf Werners gata 2, SE-421 32 Västra Frölunda, Sweden
1.3	Manufacturer's single registration number (SRN)	SE-MF-000002389
1.4	Basic UDI-DI	735002591AAKDW
1.5	Global Medical Device Nomenclature (GMDN) code	44046
1.6	Class of device	Class III
1.7	Year when the first certificate (CE) was issued covering the device	2014
1.8	Authorized representative if applicable; name and SRN	Not applicable
1.9	NB's name (the NB that will validate the SSCP) and the NB's single identification number	DNV Product Assurance AS Veritasveien 1, 1363 Høvik, Norway 2460

2 Intended use of the device

2.1 Intended purpose

G-TL is a medical device intended for use in assisted reproductive technology (ART) as a medium for culture of embryos from fertilisation to blastocyst stage.

2.2 Indication and target population

The Indication for use of G-TL is "medium for culture of embryos from fertilization to blastocyst stage". The intended target group is an adult or reproductive-age population that undergoes *in vitro* fertilization (IVF) treatment.

2.3 Contraindications and/or limitations

G-TL contains gentamicin. Do not use in patients with known hypersensitivity/allergy to the component.

3 Device description

3.1 Description of the device

G-TL is a bicarbonate-buffered medium containing human serum albumin, hyaluronan and gentamicin. The device is designed to ensure suitable physiological conditions to support culture of human embryos from fertilization to the blastocyst stage.

G-TL is ready to use after equilibration at +37°C and 6 % CO_2. The medium is sterile filtered using aseptic technique and is available in 30 ml bottles that can be used for up to two weeks after first opening.

Based on regulatory guidelines, the medicinal components present in G-TL include gentamicin and human serum albumin (HSA).

Figure 1. G-TL in a 30 mL bottle

3.2 A reference to previous generation(s) or variants if such exist, and a description of the differences

There have been no previous version of G-TL on the market.

3.3 Description of any accessories which are intended to be used in combination with the device

Not applicable

3.4 Description of any other devices and products which are intended to be used in combination with the device

General equipment and sterile non-toxic disposables in the IVF lab including CO_2 incubator, OVOIL, and EmbryoGlue.

4 Risks and warnings

4.1 Residual risks and undesirable effects

For G-TL, there are three residual risks that remain unacceptable after risk control measures. These risks have the hazardous situations ‘viral infection of the patient’ or ‘viral infection of user’ and are related to HSA present in the device. HSA is derived from human blood and could theoretically be a vector for various diseases such as hepatitis B (HBs-Ag), hepatitis C (Anti-HSV) and HIV 1/2 (Anti-HIV 1/2). The probability of patient or user being virally infected during IVF treatment is extremely small, yet the risk is considered unacceptable. Systematic literature search conducted during clinical evaluation

has not identified any negative effects or infection associated with the use of HSA in IVF media. No undesirable effect of adverse event has been reported for any of the Vitrolife's media containing HSA. The benefit-risk evaluation performed during risk analysis has concluded that the benefits of using HSA in IVF media are greater than the risks associated with blood-borne contamination as Vitrolife applies relevant safety measures. The raw material source of HSA used in Vitrolife's media have been tested for blood-borne diseases by accredited laboratories.

All the clinical risks that could occur during the use of G-TL are presented in below.

Effect	Hazardous situation
Patient	• Patient exposed to non-biocompatible product • Patient exposed to microbial contamination in media • Patient exposed to HSA • Patient exposed to high levels of endotoxins • Patient exposed to contaminated media or high level of endotoxins • Patient exposed to unintended product • Patient exposed to contaminated HSA • Patient exposed to gentamicin • Allergic patient exposed to gentamicin
User	• User exposed to gentamicin • User exposed to HSA • Allergic user exposed to gentamicin • User exposed to contaminated HSA

No adverse events or undesirable side-effects have been reported for the device during its time on the market. To control risks, raw materials for G-TL are quality tested and each LOT of the final product is tested for pH, osmolality, sterility, bacterial endotoxins and embryo toxicity. Additionally, the user is informed about the device components, contraindication, and precautions by providing information on labels and the Instruction for Use.

4.2 Warnings and precautions

Precautions related to G-TL are listed below

- Discard product if bottle integrity is compromised. Do not use G-TL if it appears cloudy.
- G-TL contains human serum albumin.
- Caution: All blood products should be treated as potentially infectious. Source material from which this product was derived was found negative when tested for antibodies to HIV, HBc, HCV, and HTLV I/II and non-reactive for HbsAg, HCV RNA and HIV-1 RNA and syphilis. No known test methods can offer assurance that products derived from human blood will not transmit infectious agents.
- To avoid contamination Vitrolife strongly recommends that media should be opened and used only with aseptic technique.
- The risk of reproductive toxicity and developmental toxicity for IVF media, including Vitrolife´s IVF media, have not been determined and are uncertain.
- Any serious incident that has occurred in relation to the device should be reported to the manufacturer and the competent authority of the Member State in which the user and/or patient is established.
- Not for injection.
- Discard the product according to standard clinical practice for medical hazardous waste when the procedure is finished.

4.3 Other relevant aspects of safety, including a summary of any field safety corrective action (FSCA including FSN) if applicable

No FSCAs have been taken for G-TL during its lifecycle.

5 Summary of clinical evaluation and post-market clinical follow-up

5.1 Summary of clinical data related to equivalent device, if applicable

Not applicable.

5.2 Summary of clinical data from conducted investigations of the device before the CE-marking, if applicable

There is no clinical investigation conducted for G-TL before its CE-marking.

5.3 Summary of clinical data from other sources, if applicable

A systematic literature search was conducted to identify clinical data on the safety and performance of G-TL.

A systematic literature search has identified several publications reporting data including the use of G-TL (Arshad et al. 2022; Clua et al. 2022; Coll et al. 2022; Lefebvre et al. 2022; Sukur et al. 2022; Tartia et al. 2022; Esmaeilian et al. 2023; Gunst et al. 2023; Joo 2023; Kieu et al. 2023; Lara-Cerrillo et al. 2023; Le et al. 2023; Uyanik et al. 2023). Data on embryo development or blastocyst formation, good-quality embryos or usable embryos after the use of G-TL supports its intended performance and claims. Several studies have reported clinical pregnancy and/or live births (Arshad et al. 2022; Clua et al. 2022; Coll et al. 2022; Lefebvre et al. 2022; Sukur et al. 2022; Tartia et al. 2022; Erdoğan et al. 2023; Esmaeilian et al. 2023; Gunst et al. 2023; Joo 2023; Kieu et al. 2023; Lara-Cerrillo et al. 2023; Le et al. 2023; Uyanik et al. 2023) with a minimum of 527 children born from treatment cycles including the use of G-TL. Several of these studies described its use from fertilization to blastocyst stage in a time-lapse incubator and the outcomes confirm the claims related to its use as a single-step medium for time-lapse culture or uninterrupted culture.

No undesirable side-effect or significant increase in the frequency or severity of incidents or any trends have been identified for G-TL during its post-market surveillance. Data from biological evaluation concluded biological safety and biocompatibility of G-TL.

According to the results from the literature search, no deviation was found in the safety or performance of the device. No post-market clinical follow-up (PMCF) studies have been conducted for G-TL. No non-serious incidents or undesirable side-effects were identified after use G-TL with a frequency or severity that negatively impact its benefit-risk profile.

5.4 An overall summary of the clinical performance and safety

According to the Indication for Use, the clinical benefit of G-TL is to support culture of embryos from fertilization to the blastocyst stage, which is supported by data from published scientific literature.

For G-TL, data on blastocyst development rates that aligned with the competency values described in the consensus report for key performance indicators (ESHRE Special Interest Group of Embryology and Alpha Scientists in Reproductive Medicine 2017) and data on usable embryos or good quality embryos/blastocysts after the use of G-TL confirms its performance according to the Indication for Use. The clinical pregnancy rate reported after the use of G-TL align with the yearly European results published by the European Society of Human Reproduction and Embryology (ESHRE) (Smeenk et al.

2023). Data from post-market surveillance (PMS) and risk management also support the safety and performance of G-TL. There are no indications of any negative effects from use of G-TL. The risks associated with the use of the device are considered acceptable when weighed against the benefits. Therefore, the benefit-risk profile is considered to be acceptable according to current knowledge/state of the art.

5.5 Ongoing or planned post-market clinical follow-up

There are no ongoing or planned PMCF studies for G-TL. However, general PMCF procedures, such as screening of scientific literature and searching adverse event databases and conducting a PMCF end user survey will be performed.

6 Possible diagnostic or therapeutic alternatives

ART is a treatment option for patients failing to conceive naturally as well as patients who have tried other treatments such as medications and surgical procedures without success. There are no therapeutic alternatives for patients at this stage.

Fertility preservation can be considered as a therapeutic alternative for patients undergoing ART. Today, ART procedures can also be used to collect gametes for fertility preservation. It serves as a proactive approach to safeguard reproductive potential, especially when medical conditions or treatments may impact fertility.

G-TL is a bicarbonate-buffered medium intended for use in ART for culture of embryos from fertilization to blastocyst stage. Devices with similar intended uses as G-TL are available in the European Union or other international markets.

7 Suggested profile and training for users

The end user (IVF professional) is expected to be trained and qualified within ART field to understand the Indication for Use of G-TL. As no special design feature or safety concerns were identified for G-TL, there is no specific training required for the end-users.

8 Reference to any harmonized standards and common specifications applied

- Medical Devices Regulation (EU) 2017/745 (MDR)
- EN ISO 13485:2016. Medical devices — Quality management systems — Requirements for regulatory purposes
- EN ISO 14971:2019. Medical devices — Application of risk management to medical devices
- EN ISO 15223-1:2016. Medical devices — Symbols to be used with medical device labels, labelling and information to be supplied — Part 1: General requirements
- EN ISO 20417:2021. Medical devices — Information to be supplied by the manufacturer MEDDEV 2.7/4
- EN ISO/TR 20416:2020. Medical devices — Post-market surveillance for manufacturers
- MDCG 2020-6 Regulation (EU) 2017/745: Clinical evidence needed for medical devices previously CE marked under Directives 93/42/EEC or 90/385/EEC. A guide for manufacturers and notified bodies. April 2020
- MDCG 2019-9 Rev.1. Summary of safety and clinical performance. A guide for manufacturers and notified bodies. March 2022

The conformity assessment will be performed according to the procedure outlined in Annex IX of the MDR (EU) 2017/745.

9 Revision history

SSCP revision number	Date issued	Change description	Revision validated by the Notified Body
1	2021-03-18	Initial version o draft SSCP for G-TL (REP-3361-v.1.0)	
2	2022-06-07	Annual update of SSCP for G-TL (REP-3361-v.2.0)	
3	2023-04-18	Annual update of SSCP for G-TL (REP-3361-v.3.0)	
4	2025-02-05	Annual update of SSCP for G-TL (REP-3361-v.4.0)	
5	2025-03-10	Edit section 6 of SSCP for G-TL (REP-3361-v.5.0)	☑ Yes Validation language: English

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