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Summary of safety and clinical performance G-PGD™

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-PGD™
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	735002591AASEE
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	2004
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 Single Identification Number: 2460

2 Intended use of the device

2.1 Intended purpose

G-PGD is a medical device intended for use in Assisted Reproductive Technology (ART) as a medium for embryo biopsy.

2.2 Indication(s) and target population(s)

The Indication for use of G-PGD is "medium for embryo biopsy". The intended target group is an adult population that undergoes *in vitro* fertilization (IVF) treatment including preimplantation testing (PGT) of embryos.

2.3 Contraindications and/or limitations

G-PGD™ contains gentamicin. Do not use in patients with known hypersensitivity/allergy to the component. However, according to the Indications for Use, G-PGD does not have patient contact.

3 Device description

3.1 Description of the device

G-PGD is a calcium (Ca^{2+}) and magnesium (Mg^{2+})-free MOPS buffered medium containing gentamicin as an antibacterial agent. For use after the addition of HSA-solution™ and equilibration at +37˚C and ambient atmosphere.

The medium is sterile filtered using aseptic technique and supplied in a 10 mL pre-sterilized bottle (Figure 1).

G-PGD is stable until the expiry date shown on the product labelling and the LOT-specific Certificate of Analysis.

- For Non-EU: Media bottles should not be stored after opening. Discard excess media after completion of the procedure.
- EU: Media bottles can be used for up to two weeks after first opening, use aseptic technique and minimize the time outside the refrigerator. Record the opening date on the bottle. Discard excess media no later than two weeks after first opening.

Figure 1. G-PGD

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

G-PGD v3, which contained penicillin G as an antibiotic. In 2007, the antibacterial agent was changed from penicillin G to gentamicin due to the greater longevity of gentamicin.

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 for the IVF lab including warming incubator, heating block, and HSA-solution.

4 Risks and warnings

4.1 Residual risks and undesirable effects

There are no unacceptable residual risks and no risks affecting the patient's health associated with the use of G-PGD. All the risks identified during risk management have the potential to affect either the user's health or the gametes/embryos and are acceptable after risk control measures. The clinical risks with the potential to affect the user are:

- User exposed to gentamicin
- Allergic user exposed to gentamicin

To control risks related to the use of G-PGD, all the raw materials are quality tested and each LOT of the final product is also analysed for sterility, endotoxin, and embryo toxicity prior to its release. Stability studies confirm the product is non-toxic for the entire lifetime. Additionally, the end user is informed about the device components, contraindication, precautions by providing information on labels and Instruction for Use.

4.2 Warnings and precautions

Precautions related to the use of G-PGD are listed.

- Discard product if bottle integrity is compromised. Do not use G-PGD if it appears cloudy.
- 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.
- 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-PGD 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

Not applicable.

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-PGD. The blastocyst development rate reported after use of G-PGD (Basile et al. 2014; Grau et al. 2015; Cedillo et al. 2016; Majumdar et al. 2016; Rubio et al. 2017) align with the ESHRE competency values (ESHRE Special Interest Group of Embryology and Alpha Scientists in Reproductive Medicine 2017). The clinical pregnancy rates reported after use of G-PGD (Mir et al. 2013; Majumdar et al. 2016; Rubio et al. 2017; Pontre et al. 2019; Ye et al. 2021) align with the yearly European results published by ESHRE (Wyns et al. 2022). Several references reported data on live births after the use of G-PGD (Rubio et al. 2013; Rubio et al. 2017; Pontre et al. 2019). According to the literature search outcomes, no deviation was found in the safety or performance of the device. No non-serious incidents or undesirable side-effects were identified after the use of G-PGD with a frequency or severity that negatively impact its benefit-risk profile. No post-market clinical follow-up (PMCF) studies have been conducted for G-PGD.

5.4 An overall summary of the clinical performance and safety

According to the Indication for Use, the clinical benefit of G-PGD is to support embryo biopsy for PGT, which is supported by data from published scientific literature. The blastocyst development rates reported after use of G-PGD align with the ESHRE competency values (Zhu et al. 2005; Savasi et al. 2007; Savasi et al. 2013) The clinical pregnancy rates reported after use of G-PGD align with the yearly European results published by ESHRE (Wyns et al. 2022). Data from PMS and risk management also support the safety and performance of G-PGD. There are no indications of any negative effects from use of G-PGD. Risk management has been effective: there are no unacceptable risks after risk evaluation and no new risks have been identified or are expected. 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 post-market clinical follow-up studies for G-PGD. However, general PMCF procedures, such as screening of scientific literature, 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 serve as a therapeutic alternative for patients undergoing ART, offering a proactive measure to safeguard reproductive potential, particularly in cases where medical conditions or treatments may impact fertility.

The aim of Preimplantation genetic testing (PGT) for aneuploidies (PGT-A) is to screen IVF embryos for chromosome abnormalities prior to transfer, with the goal of increasing the likelihood of achieving a successful pregnancy. PGT provides an alternative to pre-natal diagnosis (i.e., amniocentesis or chorionic villus sampling) and reduces the risk of couples needing to consider pregnancy termination. However, given the inherent limitations of current PGT technology as well as the potential for misdiagnosis due to embryonic mosaicism, prenatal diagnosis should be offered to all women who become pregnant following PGT (ACOG 2020; Carvalho et al. 2020).

A device with similar intended use as G-PGD is 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 and to understand the Indication for Use of G-PGD. As no special design or safety concerns were identified for G-PGD, no specific training required is for the end-users.

8 Reference to any harmonised standards and common specifications applied

- Medical Devices Regulation (EU) 2017/745 (MDR)
- 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	2021-03-12	Initial version of draft SSCP for G-PGD (REP-3153-v.1.0)	
2	2021-03-24	Correction of draft SSCP for G-PGD (REP-3153-v.2.0)	
3	2022-03-28	Periodic update of SSCP for G-PGD (REP-3153-v.3.0)	
4	2022-09-16	Addition of NB full address, conformity assessment, removal of Stevens et al., 2003 study according to CER	
5	2023-02-16	Address DNV clinical NCs (REP-3153-v.5.0)	
6	2023-05-10	Annual update of SSCP for G-PGD (REP-3153-v.6.0)	

SSCP revision number	Date issued	Change description	Revision validated by the Notified Body
7	2024-05-15	Annual update of SSCP for G-PGD (REP-3153-v.7.0)	
8	See publish date	Edit Section 6 of SSCP for G-PGD (REP-3153-v.8.0)	☑ Yes Validation language: English

10 References

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