



Austrian
Federal Office for
Safety in Healthcare
BASG

**PUBLICLY AVAILABLE ASSESSMENT REPORT FOR A VETERINARY
MEDICINAL PRODUCT**

**Glucobel 40 g/100 ml solution for infusion for horses, cattle, sheep, goats,
pigs, dogs and cats**

AT/V/0028/001/MR

Date: 05.07.2024

Glucobel 40 g/100 ml solution for infusion for horses, cattle, sheep, goats, pigs, dogs and cats	AT/V/0028/001/MR
Bela-Pharm GmbH & Co. KG	MRP
Publicly available assessment report	

PRODUCT SUMMARY

EU procedure number	AT/V/0028/001/MR
Name, strength and pharmaceutical form	Glucobel 40 g/100 ml solution for infusions for horses, cattle, sheep, goats, pigs, dogs and cats
Applicant	Bela-Pharm GmbH & Co. KG Lohner Straße 19 49377 Vechta Germany
Active substance	Glucose monohydrate
ATC vetcode	QB05B
Target species	Horses, cattle, sheep, goats, pigs, dogs and cats
Indication for use	<p>For infusion therapy in horse, cattle, sheep, goat, pig, dog and cat:</p> <ul style="list-style-type: none"> - to partially or completely cover the carbohydrate requirements, - for acute hypoglycaemia <p>For infusion therapy in cattle, sheep and goat:</p> <ul style="list-style-type: none"> - in metabolic syndromes with concomitant hypoglycaemia (ketosis)

Glucobel 40 g/100 ml solution for infusion for horses, cattle, sheep, goats, pigs, dogs and cats	AT/V/0028/001/MR
Bela-Pharm GmbH & Co. KG	MRP
Publicly available assessment report	

PRODUCT INFORMATION

The Summary of Product Characteristics (SPC), the labelling and package leaflet for this veterinary medicinal product (VMP) is available in the Union Product Database (UPD).

Glucobel 40 g/100 ml solution for infusion for horses, cattle, sheep, goats, pigs, dogs and cats	AT/V/0028/001/MR
Bela-Pharm GmbH & Co. KG	MRP
Publicly available assessment report	

SUMMARY OF ASSESSMENT

Legal basis of original application	Well established use application in accordance with Article 22 of Regulation (EC) 2019/6 as amended.
Date of completion of the original mutual recognition procedure	27.07.2022
Date veterinary medicinal product first authorised in the Reference Member State (MRP only)	17.04.2020
Concerned Member States for original procedure	DE, DK, FI, IE, NL, NO, RO, PT, SE
Concerned Member States for subsequent recognition procedure	n.a.
Withdrawn CMS during original mutual recognition procedure	n.a.

1. SCIENTIFIC OVERVIEW

The veterinary medicinal product (VMP) is produced and controlled using validated methods and tests, which ensure the consistency of the VMP released on the market.

It has been shown that the VMP can be safely used in the target species; the slight reactions observed are indicated in the SPC.

The VMP is safe for the user, the consumer of foodstuffs from treated animals and for the environment, when used as recommended. Suitable warnings and precautions are indicated in the SPC.

The efficacy of the VMP was demonstrated according to the claims made in the SPC.

The overall risk/benefit analysis is in favour of granting a marketing authorisation.

Glucobel 40 g/100 ml solution for infusion for horses, cattle, sheep, goats, pigs, dogs and cats	AT/V/0028/001/MR
Bela-Pharm GmbH & Co. KG	MRP
Publicly available assessment report	

2. QUALITY DOCUMENTATION (physicochemical, biological or microbiological information)

A. Product description

The VMP contains 44.0 g Glucose monohydrate (quantitative, equivalent to 40.0 g glucose, anhydrous) and the excipient (qualitative) water for injections.

The VMP is a sterile, non-pyrogenic solution for infusion packed in plastic containers closed with rubber stoppers and aluminium caps.

The VMP is an established pharmaceutical form and its development is adequately described in accordance with the relevant European guidelines.

B. Description of the manufacturing method

The VMP is manufactured fully in accordance with the principles of good manufacturing practice at a licensed manufacturing site.

Process validation data on the VMP have been presented in accordance with the relevant European guidelines.

C. Production and control of starting materials

The active substance is Glucose monohydrate, an established substance described in the European Pharmacopeia. The active substance is manufactured in accordance with the principles of good manufacturing practice.

The active substance specification is considered adequate to control the quality of the material. Batch analytical data demonstrating compliance with this specification have been provided.

There are no substances within the scope of the TSE Guideline present or used in the manufacture of this VMP.

D. Control tests carried out on isolated intermediates during the manufacturing process

Not applicable.

E. Control tests on the finished product

The finished product specification controls the relevant parameters for the pharmaceutical form. The tests in the specification and their limits have been justified and are considered appropriate to adequately control the quality of the VMP.

Satisfactory validation data for the analytical methods have been provided.

Batch analytical data from the proposed production site have been provided demonstrating compliance with the specification.

Glucobel 40 g/100 ml solution for infusion for horses, cattle, sheep, goats, pigs, dogs and cats	AT/V/0028/001/MR
Bela-Pharm GmbH & Co. KG	MRP
Publicly available assessment report	

F. Stability tests

Stability data on the active substance have been provided in accordance with applicable European guidelines, demonstrating the stability of the active substance when stored under the approved conditions.

G. Other information

Shelf life of the veterinary medicinal product as packaged for sale: 3 years
Shelf life after first opening the immediate packaging: Use immediately

3. SAFETY DOCUMENTATION (safety and residues tests)

A. Safety tests

Pharmacological studies

The application was submitted in accordance with Article 22 of Regulation (EU) 2019/6. The active substance of the veterinary medicinal product is well established for veterinary medicinal use, and it is therefore reasonable that the toxicological profile is assessed by referring to published scientific literature.

The applicant has provided bibliographical data of the pharmacological properties of the active substance. Glucose is a physiological energy carrier that can be metabolised by almost all of the body cells. Via glycolysis, glucose is degraded to pyruvate or lactate that are introduced into the citric acid cycle and pentose-phosphate cycle and deliver energy as adenosine-tri-phosphate.

Hypertonic glucose solutions are used for energy supply in hypoglycaemic conditions and for parenteral nutrition.

Toxicological studies

The applicant has provided relevant bibliographical data, including publically available scientific literature, excerpts from textbooks and online databases to substantiate the single dose toxicity, repeated dose toxicity, and reproductive toxicity as well as possible genotoxicity and carcinogenicity of the active ingredient glucose.

Glucose is an essential carbohydrate physiologically occurring in the organism. It is generally known to be of low toxicity. The VMP is used in individual animals, only as long as parenteral supplementation is required. The administration will be discontinued as soon as the glucose balance has been restored. Advices on correct administration are included in the product literature. Based on the submitted literature it can be concluded that no toxic effects are to be expected if the product is administered according to the SPC.

Considering the natural occurrence of glucose in animal and human organisms and the long history of safe use of similar products in human and veterinary medicine, the form and extent of the safety assessment are acceptable.

Glucobel 40 g/100 ml solution for infusion for horses, cattle, sheep, goats, pigs, dogs and cats	AT/V/0028/001/MR
Bela-Pharm GmbH & Co. KG	MRP
Publicly available assessment report	

Observations in humans

Solutions for infusion containing Glucose monohydrate have a long history of safe use in human medicine.

User safety

The applicant has provided a user risk assessment (URA) which is essentially in accordance with the relevant guidelines. It demonstrates that no relevant risks arise from the use of the VMP, when used according to the product literature.

Precautions as listed in the product literature are adequate to ensure the safe use of the product. No additional risk management communication has been introduced to the product literature.

Environmental Risk Assessment

A Phase I environmental risk assessment (ERA) was provided according to the CVMP/VICH guidelines.

Phase I:

The environmental risk assessment can stop in Phase I and no Phase II assessment is required because the active substance is a natural substance, the use of which will not alter the concentration or distribution of the substance in the environment. The product does not pose a risk to the environment when used according to the SPC.

B. Residues documentation

Residue tests

The application was submitted in accordance with Article 22 of Regulation (EU) 2019/6. Thus, this application refers to published scientific literature.

No residue depletion studies were conducted.

Maximum Residue Limits

The active substance glucose, contained in the veterinary medicinal product is included in the list of "Substances considered as not falling within the scope of Regulation (EC) No. 470/2009, with regard to residues of veterinary medicinal products in foodstuffs of animal origin". The list contains the substances for which the CVMP has concluded that no MRL evaluation is required.

The excipient water for injection, listed in section 2 of the SPC is also considered as not falling within the scope of Regulation (EC) No 470/2009.

Withdrawal Periods

Based on the data provided above, the following withdrawal periods are justified:

Glucobel 40 g/100 ml solution for infusion for horses, cattle, sheep, goats, pigs, dogs and cats	AT/V/0028/001/MR
Bela-Pharm GmbH & Co. KG	MRP
Publicly available assessment report	

Cattle, horse, sheep, goat:

Meat and offal: zero days

Milk: zero hours

Pig:

Meat and offal: zero days

4. EFFICACY DOCUMENTATION (preclinical studies and clinical trials)

A. *Pre-Clinical Studies*

Pharmacology

The applicant has provided bibliographical data of the pharmacological properties of the active substance. Glucose is a physiological energy carrier that can be metabolised by almost all of the body cells. Via glycolysis, glucose is degraded to pyruvate or lactate that are introduced into the citric acid cycle and pentose-phosphate cycle and deliver energy as adenosine-tri-phosphate.

Hypertonic glucose solutions are used for energy supply in hypoglycaemic conditions and for parenteral nutrition. In the target species cattle, sheep and goat, hypertonic glucose solutions are indicated for the treatment of metabolic disorders with concomitant hypoglycaemia, such as ketosis, as glucose reduces the catabolism of lipids, thus reducing the formation of ketone bodies.

Dose determination and confirmation

Bibliographic references have been provided to address the recommended dose regime as mentioned in the product literature.

Tolerance in the target species of animals

The tolerance of the VMP in the target species was demonstrated based on bibliographical data.

Adverse reactions can primarily be expected if very large volumes or too rapid infusion rates are applied. Appropriate information on infusion regimen is provided in the SPC and product literature to avoid overdosing.

Rapid intravenous infusion of hypertonic glucose solutions may cause thrombophlebitis at the injection site. Therefore, the advice to administer the fluid slowly by intravenous infusion not exceeding an infusion rate of 0.5 ml/kg body weight/hour has been included in the SPC. Additionally, incorrect infusion technique may cause extravasation, infection at the injection site, local pain, vein irritation or phlebitis, which may extend from the injection site, or even thrombosis. As indicated in the SPC, the infusion must be stopped immediately, if adverse reactions occur.

The product literature accurately reflects possible adverse effects, which might be expected.

Glucobel 40 g/100 ml solution for infusion for horses, cattle, sheep, goats, pigs, dogs and cats	AT/V/0028/001/MR
Bela-Pharm GmbH & Co. KG	MRP
Publicly available assessment report	

B. Clinical trials

The application was submitted in accordance with Article 22 of Regulation (EU) 2019/6. Thus, this application refers to published scientific literature. No clinical trials were performed.

The applicant has provided bibliographical data to address clinical efficacy in each target species. For the target species pigs and goat only limited data are available.

Sufficient justification was provided that glucose solutions are widely used since many years in veterinary medicine for the same indications in all target species. Consequently, the use of glucose solutions can be considered as well-established standard infusion therapy.

There is no documented evidence of an unacceptable risk associated with the use of glucose solutions similar to the VMP.

In conclusion, the current recommendations in the product literature allow an effective and safe use of the VMP to treat the following indications in the target species:

For infusion therapy in horse, cattle, sheep, goat, pig, dog and cat:

- to partially or completely cover the carbohydrate requirements,
- for acute hypoglycaemia

For infusion therapy in cattle, sheep and goat:

- in metabolic syndromes with concomitant hypoglycaemia (ketosis)

The product should be administered slowly by intravenous infusion, not exceeding an infusion rate of 0.5 ml/kg body weight/hour.

The dose should be determined according to the body weight of the animal and the desired energy supply and divided into several infusions per day.

The following dosages are recommended:

Cattle and horse: 200-400 g glucose (corresponding to 500-1000 ml of the veterinary medicinal product/animal) every 24 hours.

Sheep, goat and pig: 50-100 g glucose (corresponding to 125-250 ml of the veterinary medicinal product/animal) every 24 hours.

Hypoglycaemia in piglets: 0.75 g glucose (corresponding to 1.87 ml of the veterinary medicinal product/animal) every 4-6 hours.

Dog and cat: 5-25 g glucose (corresponding to 12.5-62.5 ml of the veterinary medicinal product/animal) every 24 hours.

5. OVERALL CONCLUSION AND BENEFIT-RISK ASSESSMENT

The data submitted in the dossier demonstrate that when the VMP is used in accordance with the Summary of Product Characteristics, the risk benefit profile for the target species is favourable and the quality and safety of the VMP for humans and the environment is acceptable.

Glucobel 40 g/100 ml solution for infusion for horses, cattle, sheep, goats, pigs, dogs and cats	AT/V/0028/001/MR
Bela-Pharm GmbH & Co. KG	MRP
Publicly available assessment report	

POST-AUTHORISATION PROCEDURES

The SPC and package leaflet may be updated to include new information on the quality, safety and efficacy of the VMP. The current SPC is available in the Union Product Database (UPD).

This section contains information on significant changes, which have been made after the original procedure, which are important for the quality, safety or efficacy of the VMP.

Sequence of significant variations

Summary of change (Application number)	Approval date
No significant changes to date.	07.05.2024