SUMMARY OF PRODUCT CHARACTERISTICS

1. NAME OF THE VETERINARY MEDICINAL PRODUCT

HEPAREMIN solution for injection

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

1 ml of solution contains:

Active substances:

Lysini hydrochloridum	100 mg
Methioninum	25 mg

Excipients:
For a full list of excipients, see section 6.1.

3. PHARMACEUTICAL FORM

Solution for injection.
Neutral or light yellow color of solution for injection.

4. CLINICAL PARTICULARS

4.1 Target species

Horse, cattle, calf, pig, sheep, dog.

4.2 Indications for use, specifying the target species

For horses, cattle, calves, pigs, sheep, dogs lysine and methionine deficiency, acid-base balance disorders (acidosis, ketosis), liver disorders, intoxications, immunodeficiency diseases, hypotrophy and low viability of youngsters. Convalescence, especially after diarrhea and respiratory syndromes, myoglobinuria in horses, disorders of mineral metabolism (as a part of complex therapy).

4.3 Contraindications

None.

4.4 Special warnings (for each target species)

Meet recommended medicinal product dosage applied in 1 place.

4.5 Special precautions for use

Special precautions for use for animals

Not applicable.

Special precautions to be taken by the person administering the medicinal product to animals

In case of accidental self-administration or self harm injecting drug immediately seek medical advice and show the label or information label to the physician. Avoid contact with eyes. If there is eye contact, immediately rinse them with water. In the case of persistence of eye or skin irritation please seek medical advice.

4.6 Adverse reactions (frequency and seriousness)
Pathological and histological analyses showed that the administration evokes local irritation of muscular tissue. Histological changes are equivalent to reaction after i.m. application of saline solution and restoration time is similar too.

4.7 Use during pregnancy, lactation or lay
The drug can be administered during pregnancy and lactation without limitation.

4.8 Interaction with other medicinal products and other forms of interaction
None known.

4.9 Amounts to be administred and administration route
The solution is necessary warmed up to body temperature prior to administration.

Standard single dose application is 1-2 ml per kg of live weight; according to disease seriousness and clinical state of animal the application of drug can be repeated up to 3 times with interval of 24 hours. In case of intoxication it is advisable to combine the drug with application of glucose.

The drug can be administered through intraperitoneal, intravenous, intramuscular or hypodermic (max. 20ml in one place for calves and cattle, 10ml for sheep, 5ml for dogs) route of administration.

4.10 Overdose (symptoms, emergency procedures, antidotes), if necessary
Lethal cases were not determined after overdosing approximately 10 times.

4.11 Withdrawal period(s)
Zero days.

5. PHARMACOLOGICAL PROPERTIES

Pharmacotherapeutic group: aminoacidum, homeostaticum, hepatoprotectivum
ATC vet code: QB05XB03.

5.1 Pharmacodynamic properties
Lysine and Methionine are the most vital, so called limiting or essential amino acids. Significance of Lysine for living organism is substantial. It is generally marked as the first limiting amino acid, which has direct influence to other amino acids utilization in living organism. It is responsible for nitrogen balance in animals, which is directly dependent on amount of lysine intake. Lysine is converted through intermediates into acetyl-coenzyme A and it is important source substance for anabolic reactions. Lysine deficiency is characterized by growth cessation, generalized weakness, atrophy, vertigo, impairment of wound healing. Methionine has above all protective effect on liver parenchyma. It is important factor for superalimentation. It is known as detoxication agent, because Methionine directly acts in disposal of some toxic substances used in medicated feed as protective or therapeutic additives. Methionine deficiency is characterized by hepatic steatosis and disintegration of liver, serious kidney malfunction, testicular and ovarian atrophy, dyshaematopoiesis, bleeding and atrophy of muscles. Therapeutic combination of Lysine and Methionine can be used in therapy of liver disorders (mainly of toxic origin), metabolic disorders, diarrhea (as supporting medicine in protein deficiency) and immunodeficiency diseases.

5.2 Pharmacokinetic particulars
Studies of free plasmatic lysine and methionine showed that both amino acids are rapidly absorbed and documented in plasma within 9 hours after drug administration. Maximal plasma levels were documented within 15-30 minutes after i.m. administration. Maximal plasma concentration of free lysine was documented within 1-2 hours after i.v. administration of the drug; maximal concentration of methionine was registered after 1 hour. Rapid clearance of lysine was documented with i.v. administration; clearance of free lysine and methionine was much slower in case of i.m. or intraperitoneal administration; raised levels of both amino acids were documented after 6-7 hours. Intraperitoneal administration is not as advisable as i.v. and i.m. route because of lower maximal plasma concentration of lysine and methionine after intraperitoneal administration.

5.3 Environmental properties
Heparemin solution for injection is injection drug applicable individually or to small group of animals. It contains non toxic, physiological important amino acids L-lysine and D,L-methionine dissolved in water for injection. Amino acids mentioned above are normally present in natural proteins. They are metabolized in animal body after application.
The drug has not any effect on environment

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients
Water for injection

6.2 Incompatibilities
Not known.

6.3 Shelf life
Shelf life of the veterinary medicinal product as packaged for sale - 4 years.
Shelf life of the veterinary medicinal product after first opening - 28 days, when stored not above the temperature 2–8 °C.

6.4 Special precautions for storage
At temperature up to + 25 ^{0}C, protect from light. Protect from freeze.
After the first opening stored at 2–8 °C.

6.5 Nature and composition of immediate packaging
Colourless glass bottles glastype I – II, chlorobutyl rubber stopper, aluminium cap.
Package size: 250 ml and 500 ml
Not all pack sizes may be marketed.

6.6 Special precautions for the disposal of unused veterinary medicinal product or waste materials derived from such products
Any unused veterinary medicinal product or waste materials derived from such veterinary medicinal products should be disposed of in accordance with local requirements.

7. MARKETING AUTHORISATION HOLDER
Biotika a.s.,
976 13 Slovenska Lupca 566
Slovak Republic

8. MARKETING AUTHORISATION NUMBER(S)

9. DATE OF FIRST AUTHORISATION / RENEWAL OF THE AUTHORISATION
2005-12-29

10. DATE OF REVISION OF THE TEXT

<PARTICULARS TO APPEAR ON THE OUTER PACKAGE>
<PARTICULARS TO APPEAR ON THE IMMEDIATE PACKAGE>

{NATURE/TYPE} FOLDER BOX

1. NAME OF THE VETERINARY MEDICINAL PRODUCT

HEPAREMIN solution for injection

2. STATEMENT OF ACTIVE AND OTHER SUBSTANCES

Active substances:

Lysini hydrochloridum	100 mg
Methioninum	25 mg

Excipients:

Water for injection	ad 1,00 ml

3. PHARMACEUTICAL FORM

Solution for injection.

4. PACKAGE SIZE

250 ml
500 ml

5. TARGET SPECIES

Horse, cattle, calf, pig, sheep, dog.

6. INDICATION(S)

Read the package leaflet before use.

7. METHOD AND ROUTE(S) OF ADMINISTRATION

Read the package leaflet before use.

8. WITHDRAWAL PERIOD

Zero days.

9. SPECIAL WARNING(S), IF NECESSARY

Read the package leaflet before use.

10. EXPIRY DATE

EXP {month/year}:
Once broached 4 years, after first opening - 28 days.

11. SPECIAL STORAGE CONDITIONS

At temperature up to + 25 ^{0}C, protect from light. Protect from freeze.
After the first opening stored at 2–8 °C.

12. SPECIAL PRECAUTIONS FOR THE DISPOSAL OF UNUSED PRODUCTS OR WASTE MATERIALS, IF ANY

Any unused veterinary medicinal product or waste materials derived from such veterinary medicinal products should be disposed of in accordance with local requirements.

13. THE WORDS "FOR ANIMAL TREATMENT ONLY" AND CONDITIONS OR RESTRICTIONS REGARDING SUPPLY AND USE, if applicable

For animal treatment only.
To be supplied only on veterinary prescription.

14. THE WORDS "KEEP OUT OF THE REACH AND SIGHT OF CHILDREN"

Keep out of the reach of children.

15. NAME AND ADDRESS OF THE MARKETING AUTHORISATION HOLDER

Biotika a.s.
Slovenská Ľupča 566
Slovak Republic

16. MARKETING AUTHORISATION NUMBER(S)

17. MANUFACTURER'S BATCH NUMBER

Batch: {number}

<PARTICULARS TO APPEAR ON THE OUTER PACKAGE>
<PARTICULARS TO APPEAR ON THE IMMEDIATE PACKAGE>

{NATURE/TYPE} LABEL

1. NAME OF THE VETERINARY MEDICINAL PRODUCT

HEPAREMIN solution for injection

2. STATEMENT OF ACTIVE AND OTHER SUBSTANCES

Active substances:

Lysini hydrochloridum	100 mg
Methioninum	25 mg

Excipients:

Water for injection	ad 1,00 ml

3. PHARMACEUTICAL FORM

Solution for injection.

4. PACKAGE SIZE

250 ml
500 ml

5. TARGET SPECIES

Horse, cattle, calf, pig, sheep, dog.

6. INDICATION(S)

Read the package leaflet before use.

7. METHOD AND ROUTE(S) OF ADMINISTRATION

Read the package leaflet before use.

8. WITHDRAWAL PERIOD

Zero days.

9. SPECIAL WARNING(S), IF NECESSARY

Read the package leaflet before use.

10. EXPIRY DATE

EXP {month/year}:
Once broached 4 years, after first opening - 28 days.

11. SPECIAL STORAGE CONDITIONS

At temperature up to + 25 ^{0}C, protect from light. Protect from freeze.
After the first opening stored at 2–8 °C.
Date of 1st opening:

12. SPECIAL PRECAUTIONS FOR THE DISPOSAL OF UNUSED PRODUCTS OR WASTE MATERIALS, IF ANY

Any unused veterinary medicinal product or waste materials derived from such veterinary medicinal products should be disposed of in accordance with local requirements.

13. THE WORDS "FOR ANIMAL TREATMENT ONLY" AND CONDITIONS OR RESTRICTIONS REGARDING SUPPLY AND USE, if applicable

For animal treatment only.
To be supplied only on veterinary prescription.

14. THE WORDS "KEEP OUT OF THE REACH AND SIGHT OF CHILDREN"

Keep out of the reach of children.

15. NAME AND ADDRESS OF THE MARKETING AUTHORISATION HOLDER

Biotika a.s.
Slovenská Ľupča 566
Slovak Republic

16. MARKETING AUTHORISATION NUMBER(S)

17. MANUFACTURER'S BATCH NUMBER

Batch: {number}

PACKAGE LEAFLET

HEPAREMIN solution for injection

1. NAME AND ADDRESS OF THE MARKETING AUTHORISATION HOLDER AND OF THE MANUFACTURING AUTHORISATION HOLDER RESPONSIBLE FOR BATCH RELEASE, IF DIFFERENT

Biotika a.s.,
976 13 Slovenska Lupca 566
Slovak Republic

2. NAME OF THE VETERINARY MEDICINAL PRODUCT

HEPAREMIN solution for injection

Solution for injection.
Neutral or light yellow color of solution for injection.

3. STATEMENT OF THE ACTIVE SUBSTANCE(S) AND OTHER INGREDIENT(S)

1 ml of solution contains:

Active substances:

Lysini hydrochloridum	100 mg
Methioninum	25 mg.

4. INDICATION(S)

For horses, cattle, calves, pigs, sheep, dogs lysine and methionine deficiency, acid-base balance disorders (acidosis, ketosis), liver disorders, intoxications, immunodeficiency diseases, hypotrophy and low viability of youngsters. Convalescence, especially after diarrhea and respiratory syndromes, myoglobinuria in horses, disorders of mineral metabolism (as a part of complex therapy).

5. CONTRAINDICATIONS

None.

6. ADVERSE REACTIONS

Pathological and histological analyses showed that the administration evokes local irritation of muscular tissue. Histological changes are equivalent to reaction after i.m. application of saline solution and restoration time is similar too.

7. TARGET SPECIES

Horse, cattle, calf, pig, sheep, dog.

8. DOSAGE FOR EACH SPECIES, ROUTE(S) AND METHOD OF ADMINISTRATION

Standard single dose application is 1-2 ml per kg of live weight; according to disease seriousness and clinical state of animal the application of drug can be repeated up to 3 times with interval of 24 hours. In case of intoxication it is advisable to combine the drug with application of glucose.

The drug can be administered through intraperitoneal, intravenous, intramuscular or hypodermic (max. 20ml in one place for calves and cattle, 10ml for sheep, 5ml for dogs) route of administration.

9. ADVICE ON CORRECT ADMINISTRATION

Meet recommended medicinal product dosage applied in 1 place.

10. WITHDRAWAL PERIOD

Zero days.

11. SPECIAL STORAGE PRECAUTIONS

Keep out of the reach and sight of children.

At temperature up to + 25 ^{0}C, protect from light. Protect from freeze.
After the first opening stored at 2–8 °C.

Do not use after the expiry date stated on the label.

12. SPECIAL WARNING(S)

In case of accidental self-administration or self harm injecting drug immediately seek medical advice and show the label or information label to the physician. Avoid contact with eyes. If there is eye contact, immediately rinse them with water. In the case of persistence of eye or skin irritation please seek medical advice.

13. SPECIAL PRECAUTIONS FOR THE DISPOSAL OF UNUSED PRODUCT OR WASTE MATERIALS, IF ANY

Any unused veterinary medicinal product or waste materials derived from such veterinary medicinal products should be disposed of in accordance with local requirements

14. DATE ON WHICH THE PACKAGE LEAFLET WAS LAST APPROVED

15. OTHER INFORMATION

For animal treatment only.
To be supplied only on veterinary prescription.

Package size: 250 ml and 500 ml
Not all pack sizes may be marketed.

For any information about this veterinary medicinal product, please contact the local representative of the marketing authorisation holder.