SPC, LABELLING AND PACKAGE LEAFLET

SUMMARY OF PRODUCT CHARACTERISTICS

1. NAME OF THE VETERINARY MEDICINAL PRODUCT

Lamulin 81 mg/g premix for medicated feeding stuff for pigs
(in Cyprus, Hungary, Italy, Portugal)
Lamulin 81 mg/g Premeczla
(in Spain)
Stalimox 81 mg/g premix for medicated feeding stuff for pigs
(in Austria, Czech Republic, France, Germany, Greece, Slovakia)

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

One g premix for medicated feeding stuff contains:

Active substance:	Tiamulin (as hydrogen fumarate)	81.0 mg
	Equivalent to	
	Tiamulin hydrogen fumarate	100.0 mg

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

3. PHARMACEUTICAL FORM

Premix for medicated feeding stuff.
White or yellowish-white granules.

4. CLINICAL PARTICULARS

4.1 Target species

Swine

4.2 Indications for use, specifying the target species

For treatment at group level of swine dysentery caused by *Brachyspira hyodysenteriae* sensitive to tiamulin hydrogen fumarate. For treatment at group level of porcine proliferative enteropathy associated with *Lawsonia intracellularis* sensitive to tiamulin hydrogen fumarate. For treatment and prevention at group level of mycoplasmal pneumonia caused by *Mycoplasma hyopneumoniae* sensitive to tiamulin hydrogen fumarate.

4.3 Contraindications

Do not use in case of hypersensitivity to the active substance or to any of the excipients. Do not administer the product with monensin, salinomycin and narasin and other monovalent ionophore-antibiotics 7 days before, during and 7 days after treatment of animals.

Resistance against tiamulin hydrogen fumarate.

4.4 Special warnings for each target species

If there is no response to treatment within 5 days, the diagnosis should be reconsidered. These animals should be removed and treated separately. For severely affected animals, which fail to respond within 3 to 5 days, parenteral treatment should be considered.
Inappropriate use of the product may increase the prevalence of bacteria resistant to tiamulin.

4.5 Special precautions for use

Special precautions for use in animals

The uptake of medication by animals can be altered as a consequence of illness. In case of insufficient uptake of feed, animals should be treated parenterally.
Use of the product should be based on susceptibility testing and take into account official and local antimicrobial policies.
The preventive use should be limited to herds where the disease has been diagnosed. Long term or repeated use should be avoided by improving management practice and thorough cleansing and disinfection.

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

Handle this product with care to avoid exposure during incorporation into feed and administration of medicated feed to the animals, taking all recommended precautions. Take adequate meauses to avoid dust formation when incorporating the product into feed. Wear dust mask, gloves, overalls and approved safety glasses. Direct contact of the product with the skin, eyes and mucous membranes should be avoided. In case of accidental exposure rinse abundantly with water. Do not smoke, eat or drink when handling the product.
People with known hypersensitivity to tiamulin should avoid contact with the veterinary medicinal product.
In case of accidental ingestion, seek medical advice immediately and show the package leaflet or the label to the physician.

4.6 Adverse reactions (frequency and seriousness)

On rare occasions erythema or mild oedema of the skin may occur in pigs following the use of tiamulin hydrogen fumarate.

4.7 Use during pregnancy, lactation

Laboratory studies in rats and rabbits have not produced any evidence of a teratogenic, foetotoxic, maternotoxic effects.
The safety of “Lamulin/Stalimox 81 mg/g premix for medicated feeding stuff for pigs” has not been established in pregnant or lactating sows. Use only in accordance with risk/benefit assessment by the responsible veterinarian.

4.8 Interaction with other medicinal products and other forms of interaction

Tiamulin is known to produce clinically important – often lethal – interactions with antibiotics belonging to the ionophores. Therefore, pigs should not receive products containing monensin, narasin, salinomycin or semduramycin during or at least 7 days before and after treatment with Lamulin/Stalimox 81 mg/g premix for medicated feeding stuff for pigs.

4.9 Amounts to be administered and administration route

To be administered orally, in medicated feeding stuff.
Dosage:
For the treatment of swine dysentery and porcine proliferative enteropathy: 6.5-8.1 mg tiamulin (equivalent to 8-10 mg tiamulin hydrogen fumarate) per kg of body weight daily, administered for 7 to 10 days
For the treatment and prevention of mycoplasmal pneumonia: 6.5-8.1 mg tiamulin (equivalent to 8-10 mg tiamulin hydrogen fumarate) per kg of body weight daily, administered for 10 consecutive days.
Administration:
An inclusion rate of 2 g Lamulin/Stalimox 81 mg/g premix for medicated feeding stuff for pigs (equivalent to 162 mg tiamulin or 200 mg tiamulin hydrogen fumarate) per kg of feed should provide the recommended dose in growing pigs between 10 and 50 kg of body weight. When medicating larger pigs including breeding animals or where inappetance occurs, the inclusion level may need adjusting as follows to give the correct dose.
Example: Dose – 8.1 mg tiamulin per kg of body weight.

$$\frac{\text{.....mg Lamulin/Stalimox 81 mg/g premix per kg body weight and day} \times \text{Average pig body weight (kg)}}{\text{Average daily feed intake (kg/animal)}} = \text{....mg Lamulin/Stalimox 81 mg/g premix per kg of feed}$$

To ensure a correct dosage body weight should be determined as accurately as possible to avoid underdosing. The required doses should be measured by suitably calibrated weighing equipment.
In case of lack of response to treatment the administration should be reconsidered (see 4.4).

4.10 Overdose (symptoms, emergency procedures, antidotes), if necessary

During the target animal tolerance study, no adverse effect was observed even at the threefold therapeutic dose administered for two times the recommended duration.
If suspected toxic reactions do occur due to extreme overdose, the medication should be discontinued and appropriate symptomatic treatment should be initiated if necessary.

4.11 Withdrawal period(s)

Meat and offal: 3 days.

5. PHARMACOLOGICAL PROPERTIES

Pharmacotherapeutic group: other antibacterials, ATCvet code: QJ01XX92

5.1 Pharmacodynamic properties

Tiamulin is a semisynthetic derivative of the naturally occuring diterpene antibiotic pleuromutilin. It acts by inhibiting protein synthesis at the ribosomal level, predominantly by binding to the 50S ribosomal subunit of bacteria. Tiamulin is a moderate-spectrum, bacteriostatic antibiotic. Its antibacterial activity is largely confined to gram-positive microorganisms, mycoplasma, certain gram-negative anaerobes such as *Brachyspira* and *Fusobacterium spp*, and the obligate intracellular bacterium, *Lawsonia intracellularis*. MIC_{90} value of tiamulin against *Brachyspira hyodysenteriae* isolated in Germany in 2002 was found to be 2.0 μg/ml, whereas its MIC_{90} against *Mycoplasma hyopneumoniae* strains isolated in Belgium between 2000 and 2002 was determined as 0.12 μg/ml.
In vitro resistance against tiamulin is known to develop slowly and stepwise. In the past 5-6 years, however, increasing number of *Brachyspira* isolates were reported to show decreased susceptibility to tiamulin. For *Mycoplasma hyopneumoniae* no resistance against tiamulin was described. No cross-resistance between tiamulin and related classes of antimicrobials and no co-resistence to other classes of antimicrobials is known.

5.2 Pharmacokinetic particulars

After oral administration to pigs, tiamulin is rapidly absorbed from the gastrointestinal tract, well distributed in the body organs, intensively metabolized in the liver and rapidly eliminated from the blood with a terminal elimination half-life of 2.1 hours. Oral bioavailability in pigs is about 85-90%, maximum plasma concentration after a single oral dose of 10 mg/kg was reported to be 0.7 μg/ml. Approximately 65% of the metabolites is excreted via bile and 35% in the urine. Only 0.3 to 0.5% of the parent compound is excreted unchanged in the urine. Tiamulin concentration in the lung after in-feed medication at a dosage of 200 mg/kg feed was measured to be 1.99 μg/g. The concentrations of tiamulin in the colon contents and mucosa after repeated oral administrations of Lamulin/Stalimox 81 mg/g granules for oral solution for pigs at a dose of 200 mg/kg feed were 11.83±2.89 and 4.80±1.02 μg/g, respectively. The tiamulin concentrations both in the lung and in the colon substantially exceed the MIC_{90} of the drug against the pathogens.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Maize starch
Povidone
Lactose monohydrate

6.2 Incompatibilities

In the absence of compatibility studies, this veterinary medicinal product must not be mixed with other veterinary medicinal product.

6.3 Shelf life

Shelf-life of the veterinary medicinal product as packaged for sale: 2 years
Shelf-life after first opening the immediate packaging: 3 months

Shelf-life after incorporation into meal or pelleted feed: 3 months

6.4. Special precautions for storage

Do not store above 25°C.
Store in the original container in order to protect from moisture.
Keep the plastic container tightly closed, or re-close the paper bag mechanically as much as possible (e.g. by a knot on the plastic bag).

6.5 Nature and composition of immediate packaging

1 kg polypropylene container with inner bag of LDPE.
5 kg polypropylene container with inner bag of LDPE.
10 kg polypropylene container with inner bag of LDPE.
10 kg multiwalled, polyethylene layered paper bag.
25 kg multiwalled, polyethylene layered paper bag.

Not all pack sizes may be marketed.

6.6 Special precautions for the disposal of unused veterinary medicinal product or waste materials derived from the use of 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

Lavet Pharmaceuticals Ltd.
1161 Budapest
Ottó u. 14.
HUNGARY

For Germany:
VIRBAC S.A.
1ère avenue – 2065 m L.I.D
F-06516 Carros

8. MARKETING AUTHORISATION NUMBER(S)

9. DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

10. DATE OF REVISION OF THE TEXT

PROHIBITION OF SALE, SUPPLY AND/OR USE
Not applicable.

In Germany:

Folgende Alleinfuttermittel für Schweine können zur Herstellung von Fütterungsarzneimitteln verwendet werden:
Ferkelaufzuchtfutter I (Alleinfuttermittel bis etwa 20 kg KGW)
FMVO Anlage 2.2
Ferkelaufzuchtfutter II (Alleinfuttermittel bis etwa 35 kg KGW)
FMVO Anlage 2.3
Alleinfuttermittel für Mastschweine bis etwa 50 kg KGW
FMVO Anlage 2.4
Alleinfuttermittel für Mastschweine von etwa 50 kg KGW an
FMVO Anlage 2.5
Alleinfuttermittel für Mastschweine von etwa 35 kg KGW an
FMVO Anlage 2.6
Alleinfuttermittel für tragende Sauen
FMVO Anlage 2.7
Alleinfuttermittel für säugende Sauen
FMVO Anlage 2.8“

In Italy:

Ricetta medico veterinaria in triplice copia non ripetibile.

LABELLING

PARTICULARS TO APPEAR ON THE IMMEDIATE PACKAGE

1 kg polypropylene container with inner bag of LDPE.
5 kg polypropylene container with inner bag of LDPE.
10 kg polypropylene container with inner bag of LDPE.
10 kg multiwalled, polyethylene layered paper bag.
25 kg multiwalled, polyethylene layered paper bag.

1. NAME OF THE VETERINARY MEDICINAL PRODUCT

Lamulin 81 mg/g premix for medicated feeding stuff for pigs
(in Cyprus, Hungary, Italy, Portugal)
Lamulin 81 mg/g Premeczla
(in Spain)
Stalimox 81 mg/g premix for medicated feeding stuff for pigs
(in Austria, Czech Republic, France, Germany, Greece, Slovakia)
Tiamulin (as hydrogen fumarate)

2. STATEMENT OF ACTIVE AND OTHER SUBSTANCES

Active substance:	Tiamulin (as hydrogen fumarate)	81.0 mg/g
	Equivalent to	
	Tiamulin hydrogen fumarate	100.0 mg/g
Excipients:	Lactose monohydrate	

3. PHARMACEUTICAL FORM

Premix for medicated feeding stuff

4. PACKAGE SIZE

1 kg
5 kg
10 kg
25 kg

5. TARGET SPECIES

Swine

6. INDICATION(S)

For treatment at group level of swine dysentery caused by *Brachyspira hyodysenteriae* sensitive to tiamulin hydrogen fumarate. For treatment of group level of porcine proliferative enteropathy associated with *Lawsonia intracellularis* sensitive to tiamulin hydrogen fumarate.

For treatment and prevention at group level of mycoplasmal pneumonia caused by *Mycoplasma hyopneumoniae* sensitive to tiamulin hydrogen fumarate.

7. METHOD AND ROUTE(S) OF ADMINISTRATION

For in-feed use.
Average dose: 6.5-8.1 mg tiamulin (equivalent to 8-10 mg tiamulin hydrogen fumarate) per kg of body weight daily.
Read the package leaflet before use.

8. WITHDRAWAL PERIOD

Withdrawal period:
Meat and offal: 3 days.

9. SPECIAL WARNING(S), IF NECESSARY

Accidental contact with the mucosa is dangerous – see package leaflet before use.

10. EXPIRY DATE

EXP {month/year}
After first opening of container: 3 months
After incorporation in meal or pelleted feed: 3 months

11. SPECIAL STORAGE CONDITIONS

Do not store above 25 C.
Store in the original container in order to protect from moisture.
Keep the plastic container tightly closed, or re-close the paper bag mechanically as much as possible (e.g. by a knot on the plastic bag).

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 and sight of children.

15. NAME AND ADDRESS OF THE MARKETING AUTHORISATION HOLDER

Lavet Pharmaceuticals Ltd.
1161 Budapest
Ottó u. 14.
Hungary

For Germany:
VIRBAC S.A.
1ère avenue – 2065 m L.I.D
F-06516 Carros

16. MARKETING AUTHORISATION NUMBER(S)

17. MANUFACTURER'S BATCH NUMBER

Batch: {number}

PRODUCT INFORMATION

PACKAGE LEAFLET
Lamulin 81 mg/g premix for medicated feeding stuff for pigs
(in Cyprus, Hungary, Italy, Portugal, Spain)
Stalimox 81 mg/g premix for medicated feeding stuff for pigs
(in Austria, Czech Republic, France, Germany, Greece, Slovakia)

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

MAH: Lavet Pharmaceuticals Ltd., 1161 Budapest, Ottó u. 14., HUNGARY
For Germany:
VIRBAC S.A. – 1ère avenue – 2065 m L.I.D. – F-06516 CARROS

Manufacturer for the batch release:
Lavet Pharmaceuticals Ltd., 2143, Kistarcsa Batthyány u. 6., HUNGARY
or
VIRBAC S.A. – 1ère avenue – 2065 m L.I.D. – F-06516 CARROS

2. NAME OF THE VETERINARY MEDICINAL PRODUCT

Lamulin 81 mg/g premix for medicated feeding stuff for pigs
(in Cyprus, Hungary, Italy, Portugal, Spain)
Stalimox 81 mg/g premix for medicated feeding stuff for pigs
(in Austria, Czech Republic, France, Germany, Greece, Slovakia)
Tiamulin (as hydrogen fumarate)

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

Active substance:	Tiamulin (as hydrogen fumarate)	81.0 mg/g
	Equivalent to	
	Tiamulin hydrogen fumarate	100.0 mg/g

Excipients: lactose monohydrate

4. INDICATION(S)

For treatment at group level of swine dysentery caused by *Brachyspira hyodysenteriae* sensitive to tiamulin hydrogen fumarate. For treatment of group level of porcine proliferative enteropathy associated with *Lawsonia intracellularis* sensitive to tiamulin hydrogen fumarate. For treatment and prevention at group level of mycoplasmal pneumonia caused by *Mycoplasma hyopneumoniae* sensitive to tiamulin hydrogen fumarate.

5. CONTRAINDICATIONS

Do not use in case of hypersensitivity to the active substance or to any of the excipients. Do not administer the product with monensin, salinomycin and narasin and other monovalent ionophore-antibiotics 7 days before, during and 7 days after treatment of animals.
Resistance against tiamulin hydrogen fumarate.

6. ADVERSE REACTIONS

On rare occasions erythema or mild oedema of the skin may occur in pigs following the use of tiamulin hydrogen fumarate.

If you notice any serious effect or other effects not mentioned in this leaflet, please inform your veterinary surgeon.

7. TARGET SPECIES

Swine

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

Dosage:
For the treatment of swine dysentery and porcine proliferative enteropathy: 6.5-8.1 mg tiamulin (equivalent to 8-10 mg tiamulin hydrogen fumarate) per kg of body weight daily, administered for 7 to 10 days
For the treatment and prevention of mycoplasmal pneumonia: 6.5-8.1 mg tiamulin (equivalent to 8-10 mg tiamulin hydrogen fumarate) per kg of body weight daily, administered for 10 consecutive days.

9. ADVICE ON CORRECT ADMINISTRATION

Administration:
An inclusion rate of 2 g Lamulin/Stalimox 81 mg/g premix for medicated feeding stuff for pigs (equivalent to 162 mg tiamulin or 200 mg tiamulin hydrogen fumarate) per kg of feed should provide the recommended dose in growing pigs between 10 and 50 kg of body weight. When medicating larger pigs including breeding animals or where inappetance occurs, the inclusion level may need adjusting as follows to give the correct dose.

Example: Dose – 8.1 mg tiamulin per kg of body weight.

$$\frac{\text{.....mg Lamulin/Stalimox 81 mg/g premix per kg body weight and day} \times \text{Average pig body weight (kg)}}{\text{Average daily feed intake (kg/animal)}} = \text{....mg Lamulin/Stalimox 81 mg/g premix per kg of feed}$$

To ensure a correct dosage body weight should be determined as accurately as possible to avoid underdosing. The required doses should be measured by suitably calibrated weighing equipment.

In case of lack of response to treatment the administration should be reconsidered (see Special warnings).

10. WITHDRAWAL PERIOD

Meat and offal: 3 days.

11. SPECIAL STORAGE PRECAUTIONS

Keep out of the reach and sight of children.

Do not store above 25°C.
Store in the original container in order to protect from moisture.
Keep the plastic container tightly closed, or re-close the paper bag mechanically as much as possible (e.g. by a knot on the plastic bag).

Do not use after the expiry date stated on the label.
Shelf life of the product as packaged for sale: 2 years.
Shelf-life after first opening the container: 3 months.
Shelf-life after incorporation into meal or pelleted feed: 3 months.

12. SPECIAL WARNING(S)

During the target animal tolerance study, no adverse effect was observed even at the threefold therapeutic dose administered for two times the recommended duration.
If suspected toxic reactions do occur due to extreme overdose, the medication should be discontinued and appropriate symptomatic treatment should be initiated if necessary.
If there is no response to treatment within 5 days, the diagnosis should be reconsidered. These animals should be removed and treated separately. For severely affected animals, which fail to respond within 3 to 5 days, parenteral treatment should be considered.
Inappropriate use of the product may increase the prevalence of bacteria resistant to tiamulin.
The uptake of medication by animals can be altered as a consequence of illness. In case of insufficient uptake of feed, animals should be treated parenterally.
Use of the product should be based on susceptibility testing and take into account official and local antimicrobial policies.
The preventive use should be limited to herds where the disease has been diagnosed. Long term or repeated use should be avoided by improving management practice and thorough cleansing and disinfection.
Handle this product with care to avoid exposure during incorporation into feed and administration of medicated feed to the animals, taking all recommended precautions. Take adequate meauses to avoid dust formation when incorporating the product into feed. Wear dust mask, gloves, overalls and approved safety glasses. Direct contact of the product with the skin, eyes and mucous membranes should be avoided. In case of accidental exposure rinse abundantly with water. Do not smoke, eat or drink when handling the product.
People with known hypersensitivity to tiamulin should avoid contact with the veterinary medicinal product.
In case of accidental ingestion, seek medical advice immediately and show the package leaflet or the label to the physician.

The safety of the veterinary medicinal product has not been established in pregnant and lactating sows. Use only in accordance with risk/benefit assessment by the responsible veterinarian.
Tiamulin is known to produce clinically important – often lethal – interactions with antibiotics belonging to the ionophores. Therefore, pigs should not receive products containing monensin, narasin, salinomycin or semduramycin during or at least 7 days before and after treatment with Lamulin/Stalimox 81 mg/g premix for medicated feeding stuff for pigs.
In absence of compatibility studies, the product must not mixed with other veterinary medicinal product.

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

Medicines should not be disposed of via wastewater or household waste.
Ask your veterinary surgeon how to dispose of medicines no longer required. These measures should help to protect the environment.

14. DATE ON WHICH THE PACKAGE LEAFLET WAS LAST APPROVED

15. OTHER INFORMATION

Pack sizes:
1 kg polypropylene container with inner bag of LDPE.
5 kg polypropylene container with inner bag of LDPE.
10 kg polypropylene container with inner bag of LDPE.
10 kg multiwalled, polyethylene layered paper bag.
25 kg multiwalled, polyethylene layered paper bag.
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.