

VIGOPHOS

THE HELPING HAND FOR METABOLIC DISORDERS

THE SUPPORTIVE TREATMENT FOR KETOSIS

**VIGOPHOS 100 mg / ml + 0.05 mg / ml
solution for injection for cattle**

Qualitative and quantitative composition
Each ml contains: Active substance:
Butafosfan 100.0 mg, Cyanocobalamin
0.05 mg.

**Indications for use, specifying the target
species**

For the supportive treatment of secondary
ketosis (e.g in abomasal displacement).

Contraindications

None.

Special warnings for each target species

None.

Special precautions for use

Special precautions for use in animals:
Not applicable.

**Special precautions to be taken by the
person administering the veterinary
medicinal product to animals:** People
with known hypersensitivity to any of the
ingredients should avoid contact with
the product. The product might be mildly
irritating to the skin or the eye. Dermal
and ocular exposure, should therefore be
avoided. In case of exposure rinse the skin
and/or the eye with water.

**Adverse reactions (frequency and
seriousness)**

None known.

Use during pregnancy and lactation

No negative effects on the use of the
product during pregnancy or lactation
have been reported. Can be used during
pregnancy and lactation.

**Interaction with other medicinal products
and other forms of interaction**

None known.

**Amounts to be administered and
administration route**

For intravenous use.

Cattle: 5 mg of butafosfan and 2.5 µg
of cyanocobalamin per kg bodyweight
(bw) corresponding to 5 ml/100 kg b.w.
daily with a 24 hour interval for three
consecutive days.

**Overdose (symptoms, emergency
procedures, antidotes), if necessary**
None known.

Withdrawal periods

Cattle: Meat and offal: 0 days; Milk: 0 hours.

Shelf life

Shelf-life of the veterinary medicinal
product as packaged for sale: 24 months
Shelf-life after first opening of the
immediate packaging: 28 days

Special precautions for storage

Keep the vial in the outer carton in order
to protect from light.

Pack size

100 ml Type II amber glass vial.

Marketing authorisation holder

LIVISTO Int'l, S.L.
Av. Universitat Autònoma, 29
08290 Cerdanyola del Vallès
Barcelona (Spain).

Marketing authorisation number

UK: Vm 43173/4008.
IE: VPA10425/007/001.

Distribution Category

UK: POM-V
IE: POM



References

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4. Nuber, U., van Dorland, H. A. & Bruckmaier, R. M. Effects of butafosfan with or without cyanocobalamin on the metabolism of early lactating cows with subclinical ketosis. *J. Anim. Physiol. Anim. Nutr. (Berl)*. 100; 146–155 (2016).
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6. Kreipe, L., Deniz, A., Bruckmaier, R. M. & van Dorland, H. A. First report about the mode of action of combined butafosfan and cyanocobalamin on hepatic metabolism in nonketotic early lactating cows. *J. Dairy Sci.* 94, 4904–4914 (2011).
7. Fürll, M., Deniz, A., Westphal, B., Illing, C. & Constable, P. D. Effect of multiple intravenous injections of butafosphan and cyanocobalamin on the metabolism of periparturient dairy cows. *J. Dairy Sci.* 93, 4155–4164 (2010).
8. Preynat, A., Lapiere, H., Thivierge, M.C., Palin, M.F., Matte, J.J., Desrochers, A. and Girard, C.L. Effects of supplements of folic acid, vitamin B12, and rumen-protected methionine on whole body metabolism of methionine and glucose in lactating dairy cows. *Journal of Dairy Science* 92, 677–689 (2009).
9. Karn, J. Phosphorous nutrition of grazing cattle: a review. *Animal Feed Science and Technology* 89. 133–153 (2001).

VIGOPHOS

THE HELPING HAND FOR METABOLIC DISORDERS

Butafosfan + Cyanocobalamin solution
for injection for cattle

Along with you

VIGOPHOS

Solution for injection for cattle

VIGOPHOS is a combination of Butafosfan (100 mg/ml) and Cyanocobalamin (0.05 mg/ml) indicated for the supportive treatment of secondary ketosis related to other metabolic disorders in cattle.

VIGOPHOS acts as a helping hand to support vets in the treatment of metabolic disorders.

KETOSIS IN DAIRY COWS

Ketosis is one of the most important disorders that can occur during the transition period, when the cow is undergoing major metabolic change. It is commonly diagnosed in the first 60 days after calving.¹

Ketosis can result from any condition which reduces Voluntary Food Intake, or from increased energy loss at peak milk production. Either of these situations results in low blood glucose and a negative energy balance. This forces the body to mobilise lipid reserves which increases the blood levels of fat metabolites such as non-esterified fatty acids (NEFAs) and ketone bodies (β -hydroxybutyrate(BHB), acetone and acetoacetate). Accumulation of these metabolites can cause the clinical signs of ketosis such as anorexia and reduced milk production.

Ketosis can be clinical or **subclinical** and it is characterised by high levels of β -hydroxybutyrate (BHB).

Stage of the disease	BHB levels in blood
Subclinical ketosis	>1,000 $\mu\text{mol/L}$
Clinical ketosis	2,600–6,000 $\mu\text{mol/L}$



BUTAFOSFAN

Butafosfan is an organic phosphorous compound used as a phosphorous source in cattle. Phosphorous deficiency in early lactation can cause inappetence, ill-thrift and poor fertility.^{2,9}

CYANOCOBALAMIN

Cyanocobalamin is the synthetic form of Vitamin B₁₂. Vitamin B₁₂ is the single most important vitamin controlling metabolism in every cell in the body. In lactating cows Vitamin B₁₂ is needed for optimal metabolism of propionate, an essential gluconeogenic precursor.³

WITHDRAWAL PERIOD

 **Meat and offal**
0 days
Milk
0 hours

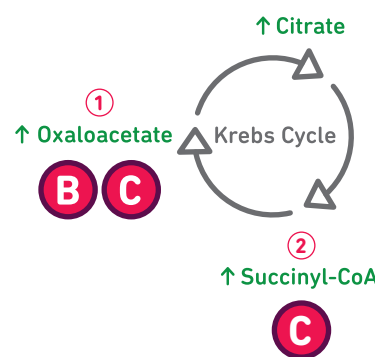
DOSAGE

5 ml / 100 kg b.w., IV
3 days

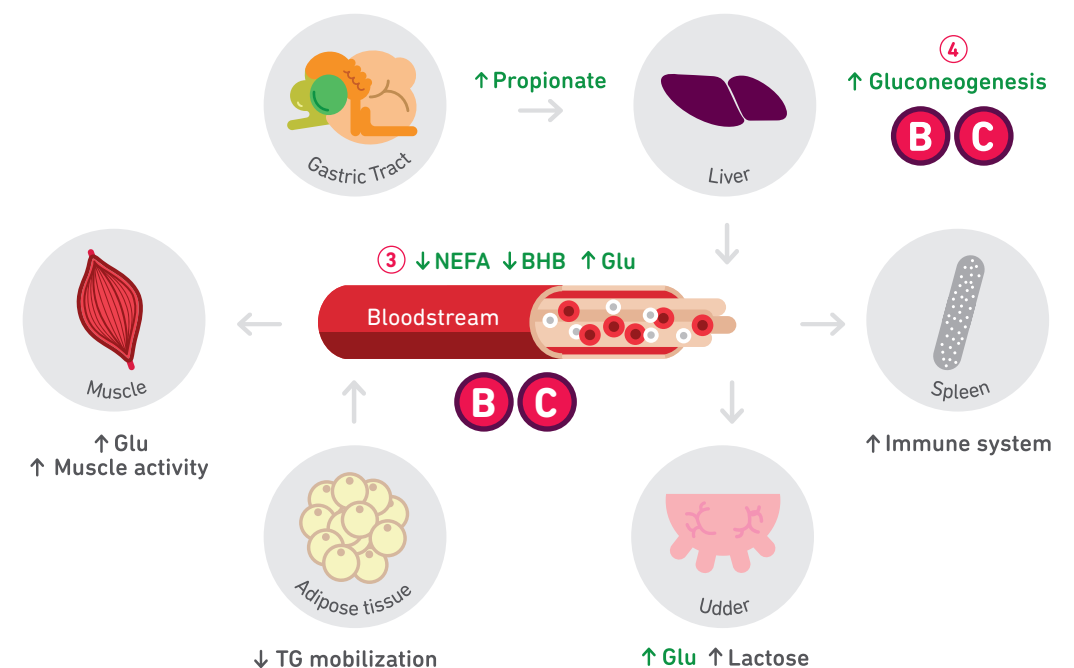
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MECHANISM OF ACTION

The Krebs Cycle, also called the citric acid cycle, is a series of chemical reactions which occurs in all cells to provide energy to the organism.



B Butafosfan
C Cyanocobalamin



①

The combined action of Butafosfan and Cyanocobalamin facilitates the creation of oxaloacetate from pyruvate.⁴

②

Cyanocobalamin **stimulates** the enzyme methyl-malonyl mutase, which is in charge of **producing Succinyl-CoA** (intermediate compound of the Krebs Cycle).⁵

③

Butafosfan + Cyanocobalamin **reduce the expression of the ACSL1 gene** which allows the complete oxidation of NEFAs to obtain energy and avoids ketone body accumulation.^{4,6}

④

Cyanocobalamin also **increases the availability of propionate**, a precursor of **gluconeogenesis**.^{5,7,8} Rates of gluconeogenesis are also regulated by **phosphorus source** availability.⁶

Butafosfan +
Cyanocobalamin

Enhance Krebs
cycle activity

↑ Levels of glucose
(gluconeogenesis)
↓ Fatty acids
mobilization

↓ Ketone bodies

↑ Immune system
↓ Metabolic disorders
and secondary
diseases

VIGOPHOS enhances the efficiency of energy production by optimising energy production from carbohydrates, thereby reducing the accumulation of ketone bodies. Low levels of ketone bodies reduce the impact of metabolic disease.