



## MYO POWER

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Vétoquinol advises you to consult your veterinary surgeon concerning any specific health questions about your horse. The information contained in this document is intended for educational purposes only.

# MYO POWER

**Vétoquinol**  
*Signe de Passion*

## 1 What is MYO POWER?

MYO POWER is a new and innovative combination of 2 sources of high quality proteins (containing 18 amino acids): potato protein and milk casein, plus an essential branched chain amino acid: L-leucine, the most important one for muscle synthesis. Each ingredient has been carefully selected according to available scientific supporting evidence for its complementary support of the horse's muscle health and development. The result is a product based on the biologically active L-leucine amino acid and highly digestible protein which have been shown to significantly improve muscular mass.

## 2 How does MYO POWER work?

MYO POWER reunites 4 different key components that enable muscle conditioning and metabolism. The combination of these elements targets the amino acids necessary for an optimal muscular function. They participate to build the muscle structure and to make it function optimally.

- Potato proteins

Potato proteins have high nutritional quality (equal to that of eggs), and a very high digestibility (more than 90%). Practically all the potato proteins are absorbed in the horse's small intestine which is the only part of the digestive tract able to absorb amino acids. In other words, there are no residual proteins remaining that can be fermented by the colon's bacteria (i.e. wastage). Amino acids from the potato proteins are absorbed as short peptides (constituted by 3 or 2 linked amino acids), which are scientifically proven to be the best form assimilated by the intestine. It is the vegetal protein presenting the highest level of essential amino acids such as L-leucine, lysine, threonine, methionine and phenylalanine. Proteins are extracted from the tuber, the premium part of the potato, by a special process eliminating bitter glycoalkaloids. Protein nutritional value in potato is superior to that of soybean, considered as the protein reference for horses.

- Calcium caseinate

Calcium caseinate is casein protein extracted from milk, with no lactose. Casein slows down nitrogen absorption by muscle. Thus, amino acids are distributed in the body, allowing to stop the muscular catabolism (breakdown) post-exercise. Proteins in milk are known to have high quality and ileal digestibility as short peptides (hence its role in foal nutrition). Several of the amino acids in the proteins are almost completely absorbed before reaching the end of the small intestine. The essential amino acids L-lysine and DL-methionine are both highly digestible in milk proteins. Furthermore, the digestible contents of lysine, methionine and total sulfur amino acids of milk proteins are higher than those for the soybean proteins. Casein intake after resistance exercise results in an overall balanced muscle protein synthesis response.

- L-Leucine

L-Leucine is an essential branched chain amino acid, meaning that the horse is not able to produce it itself, and therefore it needs to find it in its food. L-Leucine is THE key essential amino acid of muscle metabolism. Recent scientific researches prove that L-leucine is unique among amino acids for its regulatory role in muscle metabolism. It controls glycemic (sugar) regulation, participates to the energy production in cell mitochondria (power production organs within the cell) for muscular contraction and is a key factor leading to the stimulation of cellular processes for protein synthesis in muscle. L-leucine has the ability to help improve a horse's muscle mass during work or convalescence and to counteract horse muscle injuries during training. L-leucine reaches muscle in direct proportion to its dietary intake. Even as a simple amino acid, L-leucine is absorbed faster than smaller amino acids, ensuring a high availability. Among the most common horse feed ingredients and forages, potato proteins and casein have the highest leucine concentrations.

- Glucose

Carbohydrate intake simultaneously with proteins and L-leucine ingestion improves the effects of amino acids on muscle synthesis. That is why MYO POWER also contains glucose.

## 3 Are there any studies supporting MYO POWER composition?

Studies are available, and a partial list of these references follows under each category.

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URSCHEL KL, ESCOBAR J, McCUTCHEON LJ, GEOR RJ. (2011) Effect of feeding a high-protein diet following an 18-hour period of feed withholding on mammalian target of rapamycin-dependent signalling in skeletal muscle of mature horses. *Am J Vet Res. Feb;72(2):248-55.*

- Potato protein

ALDRICH G. (2009) Potato protein has features that make it a viable candidate for petfood applications. *Petfood Industry.com*, October. Download: [http://www.petfoodindustry.com/Sub\\_Level\\_-\\_News/3335.html](http://www.petfoodindustry.com/Sub_Level_-_News/3335.html)

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RALET MC & GUEGUEN J. (1999) Potato proteins composition, recovery and functional properties. *Sciences des aliments 19(2):147-165*

- Calcium caseinate

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RUTHERFURD S. M. & MOUGHAN P. J. (1998) The Digestible Amino Acid Composition of Several Milk Proteins: Application of a New Bioassay. *J Dairy Sci 81:909-917* 909

COMMITTEE ON NUTRIENT REQUIREMENTS OF HORSES. (2007) Nutrient requirements of horses. National research council of the national academies. p 164. 6th rev. Ed. The National academies press, Washington, DC.

- L-leucine

KIMBALL SR & JEFFERSON LS. (2006) Signaling Pathways and Molecular Mechanisms through which Branched-Chain Amino Acids Mediate Translational Control of Protein Synthesis. *American Society for Nutrition J. Nutr.* 136:227S-231S, January.

NORTON LE & LAYMAN DK. (2006) Leucine Regulates Translation Initiation of Protein Synthesis in Skeletal Muscle after Exercise. *J. Nutr.* 136: 533S-5537.

SUN X & ZEMEL MB. (2009) Leucine modulation of mitochondrial mass and oxygen consumption in skeletal muscle cells and adipocytes. *Nutr Metab (Lond).* 5(6):26.

VARY TC & LYNCH CJ. (2007) Nutrient Signaling Components Controlling Protein Synthesis in Striated Muscle. *American Society for Nutrition J. Nutr.* 137:1835-1843.

- Glucose

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#### 4 What kind of cases benefit most from MYO POWER?

MYO POWER is recommended for athletic horses whose muscle mass needs to be conditioned because it is being heavily solicited: in periods of intensive training, or at the beginning of the season, after a period of rest. However, it also can play a major role when given to young, active athletes to ensure continued muscle health, overall when they are trained while their growth is not finished yet. Young horses who are growing at a fast rate, aged horses with difficulty to eat and digest protein and convalescent horses with muscular loss also would benefit from MYO POWER.

#### 5 Is MYO POWER safe for horses?

At this moment in time, no known safety issues relating to this product when taken in line with the recommendations have been identified. Furthermore, potato proteins and casein are already used in some commercially available horse, pet and human high quality feed, and leucine is added in some human athlete dietary feeds.

#### 6 How much does MYO POWER cost?

Because of the complex and costly extraction of potato and casein proteins that ensures that the physical integrity of the amino acids is preserved, the addition of pure L-leucine and the use of high grade ingredients in MYO POWER, it will cost more than some supplements, but then again, you can expect more from it... You can obtain prices from your local veterinary surgeon or exclusive distributor according to the country concerned (see [www.equistro.com](http://www.equistro.com) for contact details).

### **7 My veterinary surgeon has not heard of MYO POWER, what do I do?**

If your veterinary surgeon is not familiar with MYO POWER, please have him/her call the exclusive distributor in the country concerned for more information (see [www.equistro.com](http://www.equistro.com) for contact details). They can also email questions to [info@equistro.com](mailto:info@equistro.com).

### **8 Can I use Myo POWER with other supplements or pharmaceuticals?**

There are no known negative interactions to this product or its 3 compounds at this time. However, if MYO POWER is effective in your animal, you may find that other supplements are unnecessary for horses already on MYO POWER. It is unnecessary to give additional carnitine, creatinine, or amino acids such as lysine, threonine, and methionine. You can feed your horse with other supplements with a different nutritional objective. Furthermore, if your horse needs to be treated with pharmaceutical drugs, interactions with MYO POWER have never been reported but you should nonetheless inform your veterinary surgeon at the time of prescription.

### **9 Do I need to apply an initial loading protocol?**

Vetoquinol recommends that during the initial 3 week period, for a 500 kg horse, 6 scoops (75 g) once daily of MYO POWER should be administered. After this period, the administration can be reduced to a maintenance level of 4 scoops once daily. MYO POWER is very concentrated in amino acids. It is not necessary to apply an initial loading protocol, unless your horse is heavier than 500kg.

### **10 When should I expect to see results?**

As with many complementary feeding stuffs (and this is also the case for medications), individual variation exists. Most horses start to show positive results within 3 to 5 weeks.

### **11 Is MYO POWER likely to render a positive doping test?**

No. None of the components in MYO POWER feature in a prohibited substance list.

### **12 Is there a problem with pregnancy or with fertility?**

There are no known problems with either pregnancy or with fertility. Moreover, MYO POWER may be an interesting protein source for lactating mares.

### **13 Can I buy MYO POWER at my local feed merchant or tack shop?**

No. MYO POWER is available through a country selective distribution network, which means that you should contact your veterinary surgeon or exclusive retail outlet according to the country you are based in.

### **14 I am a veterinary surgeon and I have not heard of MYO POWER, what do I do?**

If you are a veterinary surgeon, you can either contact your local Vétquinol sales representative, or consult the [www.equistro.com](http://www.equistro.com) website for the details of the exclusive Equistro distributor in your country for more information. Alternatively, contact us at [infor@equistro.com](mailto:infor@equistro.com).

### **15 Are there animal products in MYO POWER?**

Yes. The calcium caseinate in MYO POWER originates from cow's milk. This is the same grade casein that is used in many human muscle health products and other horse and pet foods. Even if your horse is adult, there is no problem to feed him with milk components. Casein is no longer milk, but only its richest protein part, without lactose.

### **16 How do I know MYO POWER contains what is stated on the label?**

This is a good question and an all too often concern for horse owners and veterinary surgeons alike who are wanting to use high quality feed supplements. EQUISTRO® is a brand belonging to Vetoquinol, the 10th largest International Veterinary Pharmaceutical company in the world and as such our reputation is based on the quality and transparency of the products and the associated information concerning them. Vetoquinol goes further, the European authorisation as denoted by the production site specific number α FR 69-243-22 (look on the EQUISTRO® range packaging) that authorises the manufacturing of complementary feeding stuffs at its 100% dedicated manufacturing site in France is subject to regular checks and audits from the veterinary and fraud authorities with random sampling and analysis controls to ensure that the specific European Directives relating to manufacturing and labelling are adhered to.

### **17 Is MYO POWER suitable for all breeds of horse and pony?**

The answer is clearly yes as the mechanism of action does not change - there is no reason to think otherwise.

### **18 Are there any side effects with MYO POWER?**

At this moment in time, no known safety issues to this product when taken in line with the recommendations have been identified.

### **19 Is MYO POWER fattening for horses?**

No. MYO POWER improves muscular mass by stimulating muscular cell proliferation and not by increasing cell volume. MYO POWER contributes to the fat use for muscle synthesis. Your horse will have a better muscular shape but not a fat accretion.

### **20 Does it make sense to provide MYO POWER if my horse is not training?**

Normally, for a horse in a period of rest or undergoing light exercise, all the amino acids needed are available in a well-balanced diet. But in case of disease, poor appetite, convalescence, or with an aged horse with poor teeth and difficulties to digest protein, MYO POWER is a very good substantial aid. Moreover, MYO POWER may be helpful for a lanky foal that is growing rapidly.

### **21 What distinguishes MYO POWER from other (similar) products?**

MYO POWER composition has really strong scientific explanations based on serious available studies (see question n°3). Each MYO POWER ingredient has been carefully chosen to be safe and efficient for muscle mass improvement in horses, with high quality proteins being provided in the right beneficial quantity. MYO POWER raw materials are provided by manufacturers subject to high quality controls and independent audits, and are free from pollution or contaminant matter. As for ingredients often found in other muscle building formulas with allegations often too good to be true, there is neither scientific basis nor real proof of the efficiency/safety of components such as creatine, gamma-oryzanol or carnitine in horses, that is why Vétoquinol doesn't use these kinds of substances. Last but not least, MYO POWER is a tasty product with a delicious smell for your horse's pleasure.

### **22 How can I optimize the supplementation of MYO POWER?**

First and foremost, your horse has to be fed with a well-balanced diet. MYO POWER is an aid, and can't replace a good ration. It is recommended to give the product during at least 5 weeks. Furthermore, more efficient effects are obtained when feeding MYO POWER after exercise, to stop endogenous protein induced-catabolism (muscle breakdown). Then, for each kind of horse, a specific training program has to be put in place. Exercise enhances MYO POWER ability to stimulate muscle mass synthesis. Moreover, training must be continued after a course of MYO POWER in order to not lose all the positive effects of the product.

### **23 Is it possible to feed the horse with too much protein because of MYO POWER and to face possible risks linked to a protein excess?**

No. For a 500 kg adult horse with moderate exercise, recommended crude protein intake per day is around 760g (Nutrient requirements of horses, 6th revised Ed.). The maximum daily intake of MYO POWER is 75g (it may be higher if your horse is heavier than 500kg) that is to say 34g of crude protein. Protein intake must be significantly higher to have negative side effects. Even if the horse's body weight is overestimated and that you would give a 12.5g scoop above recommended, your horse would receive only 5.5g of extra crude protein, which would not lead to risky consequences. Moreover, in case of protein excess, problems might occur only in conjunction with impaired water intake or secondary hepatic conditions. Nonetheless, it is better to follow our label recommendations.

### **24 How long should I give MYO POWER to my horse?**

The minimum duration of MYO POWER administration is at least 5 weeks, but you can continue as long as you think your horse requires it. Most of the time, MYO POWER is used as a course of treatment lasting 2 to 3 months.