

Marbomax 160[®]

**Broad-
spectrum
bactericidal
action in a
single dose**

IT INCLUDES A
PROTECTIVE CASE



over[®]
VETERINARY MEDICINE



FOR USE IN
BOVINES

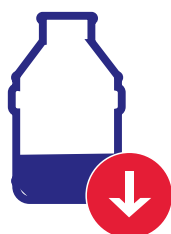


MANUFACTURED UNDER
GMP STANDARDS

Bovine mastitis

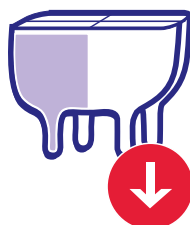
This is an infectious-contagious disease of the mammary gland. Its inflammation occurs in response to the invasion of different types of bacteria (such as mycoplasmas), fungi, yeasts and even some viruses, through the nipple canal.

MASTITIS IS ONE OF THE MOST COSTLY DISEASES FOR THE DAIRY INDUSTRY



5-10%

5-10% less milk production

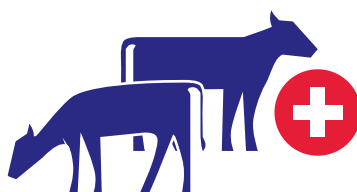


3-45%

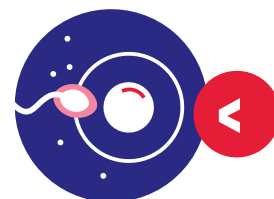
3-45% less milk production per udder quarter/day



Mastitis losses can represent 20% of the potential production



The number of services per conception increases



There is an average delay of conception of 20 days



In addition to mastitis, other diseases also cause a great economic impact on livestock production.

Among them, we can mention the bovine respiratory diseases, which feature a lethality rate of up to 35% and rank first in terms of economic losses due to sanitary causes in feedlot systems.

On the other hand, there are also digestive diseases, such as the infectious enteritis and gastroenteritis, which produce a serious impact on the animal's weight gain and growth.

Marbomax 160[®] is an injectable solution of marbofloxacin 16%

Marbofloxacin is a second-generation synthetic fluoroquinolone, which has bactericidal antimicrobial activity and is concentration-dependent. The compound acts on the bacterial DNA by attacking the genetic material of bacteria and destroying them, without producing lysis.

As a consequence, the dispersion of endotoxins responsible for febrile and anaphylactic processes is stopped, thus accelerating the animal's recovery.

The action spectrum of **Marbomax 160[®]** groups gram-negative and gram-positive bacteria, including some pathogenic anaerobes.

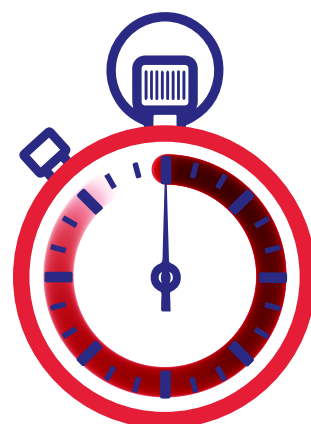
In vitro activity of marbofloxacin against major bovine pathogens (Drugeon *et al.* 1997; Marbofloxacin Reference Book, 1999; Meunier *et al.* 2004).

BACTERIA	MIC ₅₀ (µg/ml)	MIC ₉₀ (µg/ml)	RANGE
<i>Pasteurella multocida</i>	0.018	0.057	0.008-2
<i>Mannheimia haemolytica</i>	0.019	0.17	0.008-2
<i>Haemophilus somnus</i>	0.021	0.03	0.015-0.5
<i>Staphylococcus aureus</i>	0.2	0.5	0.25-1
<i>Escherichia coli</i>	0.012	0.145	0.008-16
<i>Klebsiella spp.</i>	0.04	0.05	0.03-0.06
<i>Salmonella spp.</i>	0.014	0.073	0.008-0.25
<i>Mycoplasma bovis</i>	0.35	0.48	0.25-1

Marbomax
160[®]



**Broad anti-bacterial
spectrum**



**Fast bactericidal
action**

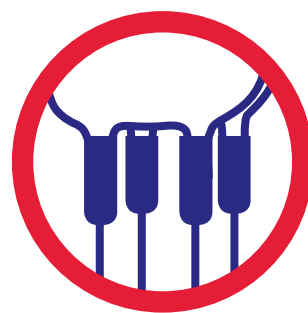
Julián Alberto, vet.



**Effective
concentrations in
a single dose**



**Withdrawal time
for meat: 15 days***

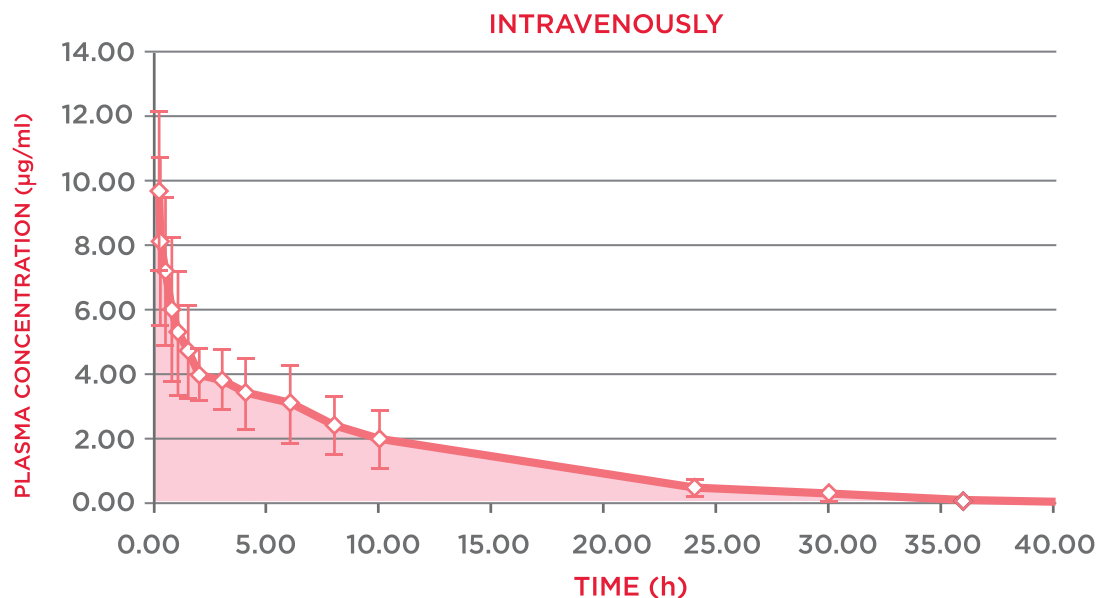


**Withdrawal time for
milk: 60 hours (5
milking)**

*Test conducted by the Drug Quality Control Laboratory of the School of Biochemistry and Biological Sciences belonging to Universidad Nacional del Litoral (UNL).

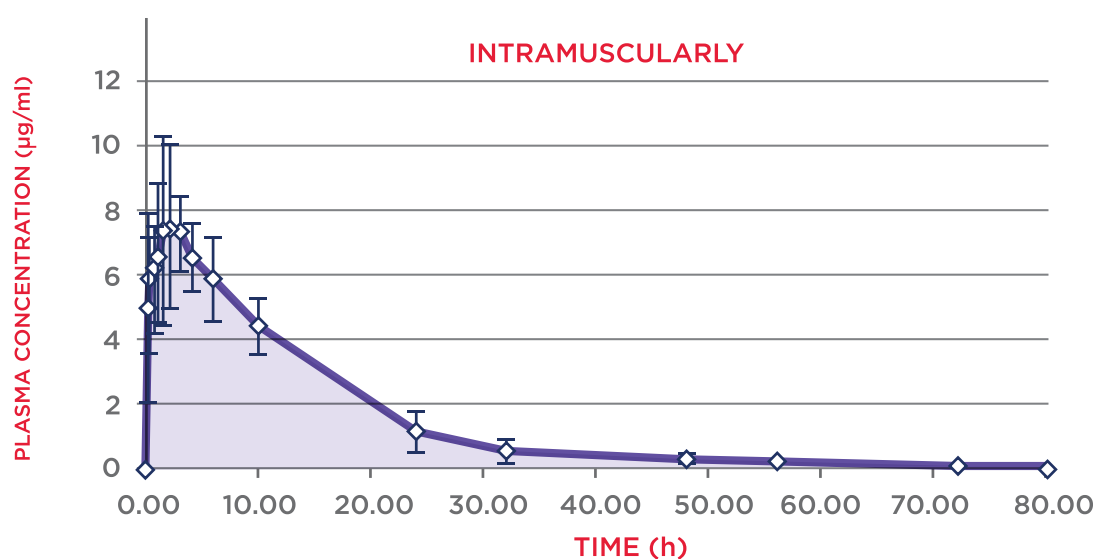
Marbomax 160®: Effective concentrations in a single dose

Plasma concentration profile of **Marbomax 160®** administered intravenously (10 ml/160 kg body weight) in a single dose in bovines (n=6). (a)



(a) Test conducted by Dr. Diego Diaz David (a private technical consultant) and Dr. Nicolás Litterio (School of Veterinary Sciences, Universidad Católica de Córdoba).

Plasma concentration profile of **Marbomax 160®** administered intramuscularly (10 ml/160 kg body weight) in a single dose in bovines (n=6). (b)



(b) Test conducted by Dr. Diego Diaz David (a private technical consultant) and Dr. Nicolás Litterio (School of Veterinary Sciences, Universidad Católica de Córdoba).

The bioavailability of Marbomax 160® after intramuscular application is total, reaching maximum values (Tmax) in only 1.7 h.

Cmax/MIC ratios higher than 10 and AUC/MIC ratios higher than 125 indicate an optimal bactericidal effect for fluoroquinolones. The following table shows the values determined for common pathogens.

MARBOMAX 160® EFFICACY RATES FOR BOTH ROUTES OF ADMINISTRATION

	MIC90: (µg/ml)	PK/PD relationship	Intravenously	Intramuscularly
<i>Pasteurella multocida</i>	≤ 0.03	Cmax/ MIC:	503.3	285.6
		AUC/MIC:	1972.3	3831.6
<i>Mannheimia haemolytica</i>	≤ 0.03	Cmax/ MIC:	503.3	285.6
		AUC/MIC:	1972.3	3831.6
<i>Histophilus somnus</i>	0.06	Cmax/MIC:	251.6	142.8
		AUC/MIC:	986.1	1915.5
<i>Klebsiella spp.</i>	0.032	Cmax/MIC:	471.8	267.8
		AUC/MIC:	1849	3592.1
<i>E. coli</i>	0.011	Cmax/MIC:	1372.7	779.1
		AUC/MIC:	5379.1	10450
<i>Salmonella spp.</i>	0.25	Cmax/MIC:	60.4	34.3
		AUC/MIC:	236.7	459.8
<i>Proteus mirabilis</i>	0.21	Cmax/MIC:	71.9	40.8
		AUC/MIC:	281.7	547.4

Marbomax 160® reaches maximum values after 1.7 h



Marbomax 160[®]

DESCRIPTION:

Fluoroquinolone antimicrobial agent.

FORMULA:

Every 100 ml, it contains:

Marbofloxacin.....16 g
Formulation agents.....q.s.

ANIMAL SPECIES TO WHICH IT IS INTENDED:

Cattle and swine.

INDICATIONS OF USE:

Cattle: treatment of mastitis, respiratory tract infections (pneumonia, bronchopneumonia), treatment and prevention of infectious digestive processes (enteritis, gastroenteritis, etc.).

Swine: treatment of respiratory tract infections, intestinal infections, mastitis-metritis-agalactia syndrome.

ADMINISTRATION:

Cattle: intramuscularly or intravenously.

Swine: intramuscularly.

DOSAGE:

Cattle: 10 mg per k.l.w. (10 ml every 160 k.l.w.) in a single injection. If the volume to be injected intramuscularly is more than 20 ml, it must be divided into two or more injection sites.

Swine: 8 mg per k.l.w. (1 ml every 20 k.l.w.).

Marbomax 160[®] is a product developed together with the School of Biochemistry and Biological Sciences belonging to UNL. Call: IP 2017 ASaCTel. Project: IP 0035-2017.



over[®]
VETERINARY MEDICINE

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WE ARE PRESENT IN
MORE THAN 50 COUNTRIES