

**TORBUGESIC SA- butorphanol tartrate solution**  
**Zoetis Inc.**

-----  
**Torbugesic-SA®**  
**(butorphanol tartrate injection)**

Torbugesic-SA®  
(butorphanol tartrate injection)

**CIV**

**CAUTION**

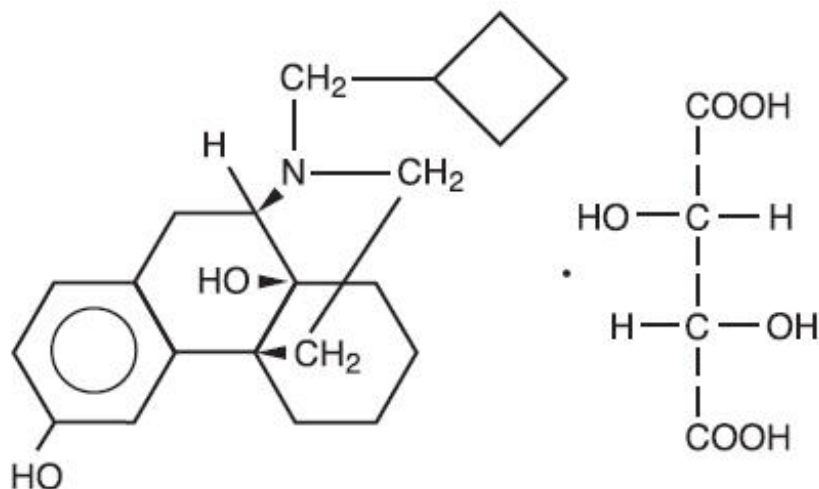
Federal (USA) law restricts this drug to use by or on the order of a licensed veterinarian.

**DESCRIPTION**

Butorphanol tartrate, is a synthetic, centrally acting, narcotic agonist-antagonist analgesic with potent antitussive activity. The results from laboratory and clinical studies suggest the existence of several distinct types of receptors that are responsible for the activity of opioid and opioid-like drugs. When activated, the  $\mu$ (mu)-receptors are involved in analgesia, respiratory depression, miosis, physical dependence and feelings of well-being (euphoria). When activated, the  $\kappa$ (kappa)-receptors are involved in analgesia, as well as less intense (as compared to  $\mu$ -receptors) miosis and respiratory depression. Butorphanol is considered to be a weak antagonist at the  $\mu$ -receptor, but a strong agonist at the  $\kappa$ -receptor. Thus, butorphanol provides analgesia with a lower incidence and/or intensity of adverse reactions (e.g., miosis and respiratory depression) than traditional opioids.

Butorphanol tartrate is a member of the phenanthrene series. The chemical name is Morphinan-3, 14-diol, 17-(cyclobutylmethyl)-, (-)-, (S- (R\*, R\*))- 2,3- dihydroxybutanedioate (1:1) (salt). It is a white, crystalline, water soluble substance having a molecular weight of 477.55; its molecular formula is C<sub>21</sub>H<sub>29</sub>NO<sub>2</sub>• C<sub>4</sub>H<sub>6</sub>O<sub>6</sub>.

**Chemical Structure**



Each mL of TORBUGESIC-SA contains 2 mg butorphanol base (as butorphanol tartrate, USP); 3.3 mg citric acid, USP; 6.4 mg sodium citrate, USP; 4.7 mg sodium chloride; and 0.1 mg benzethonium

chloride; q.s. with water for injection.

## **CLINICAL PHARMACOLOGY**

### **Feline Pharmacology**

The magnitude and duration of analgesic activity of butorphanol were studied in cats under controlled laboratory conditions using both a visceral pain model and a somatic pain model.<sup>1,2</sup> Subcutaneous butorphanol dosages of 0.4 mg/kg produced analgesia significantly ( $p < 0.05$ ) greater than the placebo for up to two hours in the somatic pain model. At the label dose (0.4 mg/kg), cardiopulmonary depressant effects were minimal after treatment with butorphanol as demonstrated in cats.<sup>1,2</sup>

Clinical studies confirmed the analgesic effect of butorphanol administered subcutaneously in the cat. In field trials the overall analgesic effect was rated as satisfactory in approximately 75% of butorphanol treated cats. The duration of activity in cats responding to butorphanol ranged from 15 minutes to 8 hours. However, in 70% of responding cats the duration of activity was 3 to 6 hours following subcutaneous administration

### **Safety Studies in Cats**

Daily subcutaneous injections of butorphanol in cats, beginning at a dosage of 2 mg/kg the first week and doubling each week to a final dosage of 16 mg/kg on the fourth week, resulted in no deaths. No evidence of toxicity was observed during the first three weeks of the experiment, other than pain on injection. During the fourth week, transient incoordination, salivation, or mild seizures were observed within the first hour in the cats following the 16 mg/kg dosage (40 times the recommended clinical dosage). No other clinical, serum chemistry, or gross necropsy evidence of drug toxicity was encountered in any of the cats.

In subacute safety studies, butorphanol was injected subcutaneously to each of six cats at dosages of 0 (saline), 0.4, 1.2 or 2.0 mg/kg, every six hours for six days and continued once daily for a total of 21 days. The only adverse clinical effect observed was pain on injection. Histopathologic changes indicative of minimal to slight irritation were noted at the injection sites in 3 of 6 cats in the low dose group, 4 of 6 cats in the middle dose group and 6 of 6 cats in the high dose group. Histopathologic changes of focal renal tubular dilation were noted in half of the cats in the high dose group.

## **INDICATIONS**

TORBUGESIC-SA (butorphanol tartrate injection) is indicated for the relief of pain in cats caused by major or minor trauma, or pain associated with surgical procedures.

## **WARNINGS**

NOT FOR HUMAN USE.

## **PRECAUTIONS**

TORBUGESIC-SA, a potent analgesic, should be used with caution with other sedative or analgesic drugs as these are likely to produce additive effects.

Safety for use in pregnant female cats, breeding male cats or kittens less than 4 months of age has not been determined. Use of TORBUGESIC-SA can therefore not be recommended in these groups.

## **ADVERSE REACTIONS**

In clinical trials in cats, pain on injection, mydriasis, disorientation, swallowing/licking and sedation were reported.

## **DOSAGE**

The recommended dosage in cats is 0.4 mg of butorphanol per kilogram body weight (0.2 mg/lb) given by subcutaneous injection. This is equivalent to 1.0 mL of TORBUGESIC-SA per 10 lbs of body weight.

Pre-clinical model studies and clinical field trials in cats demonstrated that the analgesic effects of TORBUGESIC-SA are seen within 20 minutes and persist in the majority of responding cats for 3 to 6 hours following subcutaneous injection (see **Feline Pharmacology**). The dose may be repeated up to 4 times per day for up to 2 days.

Use contents within 4 months of first puncture.

## **SUPPLY**

10 mL vials TORBUGESIC-SA (butorphanol tartrate injection) Veterinary Injection, 2 mg base activity per mL.

10 mL —vials

Store at controlled room temperature 20°- 25°C (68°-77°F) with excursions between 15°- 30°C (59°- 86°F).

## **REFERENCES**

1. Sawyer, D.C. and Rech, R.H. "Analgesia and Behavioral Effects of Butorphanol, Nalbuphine and Pentazocine in the Cat," *J. Amer. Hosp. Assoc.* 23: 438-446, 1987.
2. Mandsager, R.E. and Raffae, M.R. "Evaluation of Periosteal Nociception in the Cat," *PVN* 2(4): 237-242, 1991.

Approved by FDA under NADA # 141-047

zoetis

Manufactured by:  
Zoetis Manufacturing and Research Spain, S.L.  
Olot, Spain

Distributed by:  
Zoetis Inc.  
Kalamazoo, MI 49007

Revised: July 2019

40028428

**PRINCIPAL DISPLAY PANEL - 10 mL Label**

Each mL of solution contains:

Butorphanol base  
(as butorphanol tartrate)..... 2.0 mg  
Citric acid..... 3.3 mg  
Sodium citrate..... 6.4 mg  
Sodium chloride..... 4.7 mg  
Benzethonium chloride..... 0.1 mg  
Water for injection..... q.s.

**READ PACKAGE INSERT.**

**NOT FOR HUMAN USE.**

**DOSAGE:** By subcutaneous injection. Cats: Analgesic dose 0.4 mg/kg (0.2 mg/lb) body weight. Repeat up to 4 times per day as required. Do not treat for more than 2 days.

Use contents within 4 months of first puncture.

Store at controlled room temperature 20°-25°C (68°-77°F) with excursions between 15°-30°C (59°-86°F).



Manufactured by:  
Zoetis Manufacturing  
and Research Spain, S.L.  
Olot, Spain

Distributed by:  
Zoetis Inc.  
Kalamazoo, MI 49007  
Product of the Czech Republic

## Torbugesic -SA® (butorphanol tartrate injection)

contains 2 mg butorphanol base per mL  
as butorphanol tartrate

**CAUTION:** Federal (USA) law restricts  
this drug to use by or on the order of  
a licensed veterinarian.

Approved by FDA under NADA # 141-047

10 mL



## TORBUGESIC SA

butorphanol tartrate solution

### Product Information

Product Type	PRESCRIPTION ANIMAL DRUG	Item Code (Source)	NDC:54771-4531
Route of Administration	SUBCUTANEOUS		

### Active Ingredient/Active Moiety

Ingredient Name	Basis of Strength	Strength
BUTORPHANOL TARTRATE (UNII: 2L7I72RUHN) (BUTORPHANOL - UNII:QV897JC36D)	BUTORPHANOL TARTRATE	2 mg in 1 mL

### Inactive Ingredients

Ingredient Name	Strength
CITRIC ACID MONOHYDRATE (UNII: 2968PHW8QP)	3.3 mg in 1 mL
SODIUM CITRATE (UNII: 1Q73Q2JULR)	
SODIUM CHLORIDE (UNII: 451W47IQ8X)	
BENZETHONIUM CHLORIDE (UNII: PH41D05744)	

### Packaging

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:54771-4531-1	10 mL in 1 VIAL		

### Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NADA	NADA141047	06/11/1985	

**Labeler** - Zoetis Inc. (828851555)

## Establishment

<b>Name</b>	<b>Address</b>	<b>ID/FEI</b>	<b>Business Operations</b>
Teva Czech Industries s.r.o		643896244	API MANUFACTURE

## Establishment

<b>Name</b>	<b>Address</b>	<b>ID/FEI</b>	<b>Business Operations</b>
Zoetis Manufacturing & Research Spain, S.L.		460052343	MANUFACTURE

Revised: 3/2020

Zoetis Inc.