



**think**  
**ANESTHESIA™**

**jurox**

# Alfaxan<sup>®</sup>

(alfaxalone 10 mg/mL)

Intravenous Injectable Anesthetic

**Repeatable. Reliable. Relax.**



By Kirby Pasloske

**For veterinary use only**

DIN: 02324040

**Pr Alfaxan<sup>®</sup>**

**Alfaxalone BP 10 mg/ml**

**DESCRIPTION**

Sterile intravenous general anaesthetic solution for dogs and cats, with its mode of action as a GABA<sub>A</sub> receptor blocker.

**INDICATIONS**

As an induction agent prior to inhalation anaesthesia in dogs and cats. As a sole anaesthetic agent for the induction and maintenance of anaesthesia for the performance of examination or surgical procedures in dogs and cats.

**CONTRAINDICATIONS**

Do not use in combination with other intravenous anaesthetic agents. In the absence of compatibility studies, the veterinary medicinal product must not be mixed with other veterinary medicinal products.

**CAUTIONS**

As with all general anaesthetic agents:

- It is advisable to ensure that the patient has been fasted before receiving the anaesthetic.
- Additional monitoring is advised and particular attention should be paid to respiratory parameters in aged animals, or in cases where there may be additional physiological stress imposed by pre-existing pathology, shock or caesarean section.
- Following induction of anaesthesia, the use of an endotracheal tube is recommended to maintain airway patency.
- It is advisable to administer supplemental oxygen during maintenance of anaesthesia.
- Respiratory embarrassment may occur – ventilation of the lungs with oxygen should be considered if haemoglobin saturation with oxygen (SpO<sub>2</sub> %), as measured by a pulse oximeter, falls below 90% or if apnoea persists for longer than 60 seconds.

**ADVERSE REACTIONS**

In dogs, respiratory depression (apnoea and bradypnea) can be very common, while hypoxia can be common. Cardiovascular effects (either increased or decreased heart rate, and increased or decreased blood pressure) can be very common.

In cats, respiratory depression in the form of apnoea can be very common, while bradypnea and hypoxia may be common. Cardiovascular effects (either increased or decreased heart rate, and increased or decreased blood pressure) can be very common.

Hypothermia can be experienced very commonly in dogs, and commonly in cats. Emesis is uncommon in both species.

**OVERDOSE**

Acute tolerance to overdose has been demonstrated up to 10 times the recommended dose of 2 mg/kg in the dog (i.e. up to 20 mg/kg) and up to 5 times the recommended dose of 5 mg/kg in the cat (i.e. up to 25 mg/kg). For both dogs and cats, these excessive doses delivered over 60 seconds cause apnoea and a temporary decrease in mean arterial blood pressure. The decrease in blood pressure is typically compensated for by changes in heart rate. When hypotension persists, these animals should be treated by intermittent positive pressure ventilation with room air or oxygen and, if required, with fluid therapy. Recovery is usually rapid.

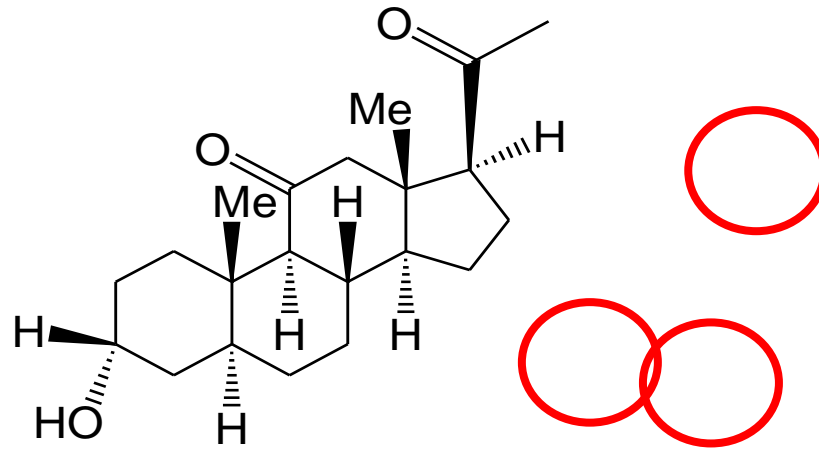
**Alfaxan<sup>®</sup>**

# Alfaxan<sup>®</sup> Smart. Safe. Versatile. Proven.

When using Alfaxan, patients should be continuously monitored, and facilities for maintenance of a patent airway, artificial ventilation, and oxygen supplementation must be immediately available.

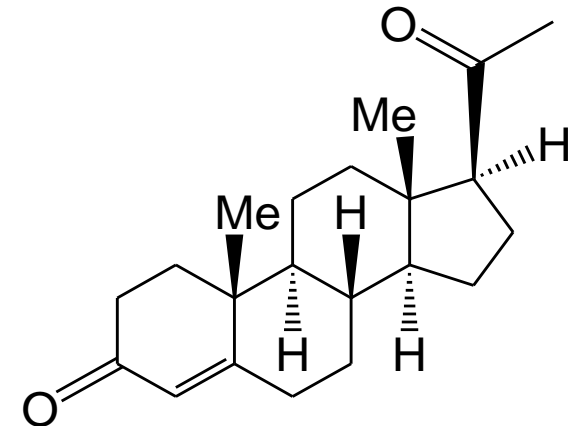


# Structure



**Alfaxalone**

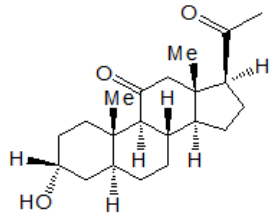
3- $\alpha$ -hydroxy-5- $\alpha$ -pregnane-11,20-dione



**Progesterone**

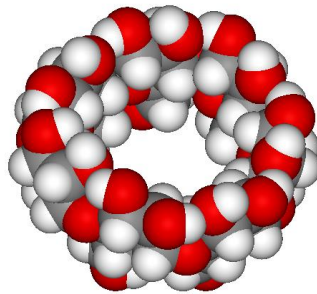
3- $\alpha$ -one-pregnane-20-one

# The Formulation



Alfaxalone

+



Cyclodextrin

+

Buffers to  
pH 7

+

Water  
For  
Injection

=



Clear, iso-osmolar with the viscosity of water

10 mg mL<sup>-1</sup>

**Dopamine**

**Glutamate**

**GABA**

**Catecholamines**

**Glycine**



**Serotonin**

**Alfaxan®**





Extracellular

Lipid Bilayer

Intracellular



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# Safety Data



Canine

Type of Study	Dose multiple of 1X (2 mg/kg)	Number of Doses
Acute Overdose	Up to 10X* (20 mg/kg)	1
Margin of Safety	Up to 5X^ (10 mg/kg)	3 over 1 week





Feline

Type of Study	Dose multiple of 1X (5 mg/kg)	Number of Doses
Acute Overdose	Up to 5X* (25 mg/kg)	1
Margin of Safety	Up to 5X^ (25 mg/kg)	3 over 1 week

\*some animals required IPPV with room air

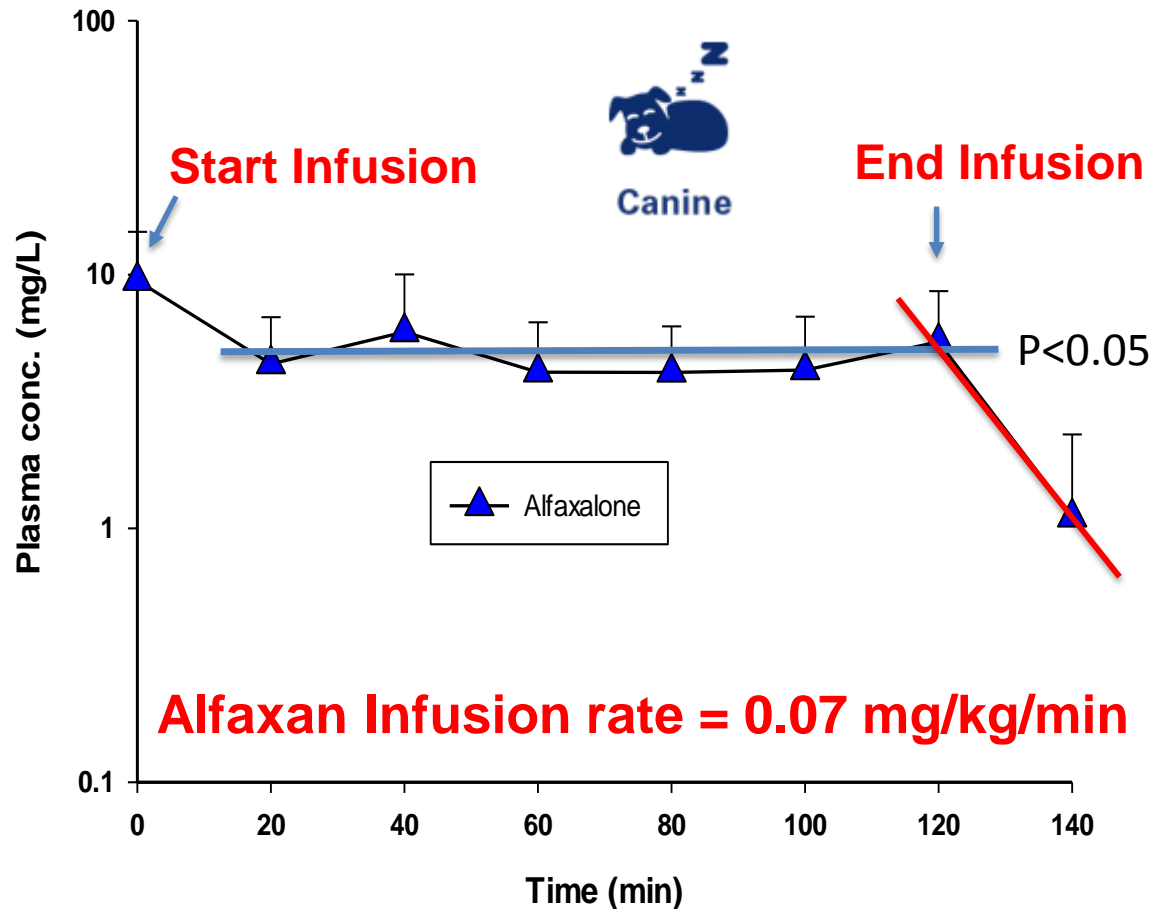
^no observable toxicity in blood, tissue and cellular level

# Metabolism and Clearance

Species	Half life (min)	Clearance (mL kg <sup>-1</sup> min <sup>-1</sup> )*
 Canine	34	60
 Feline	43	35

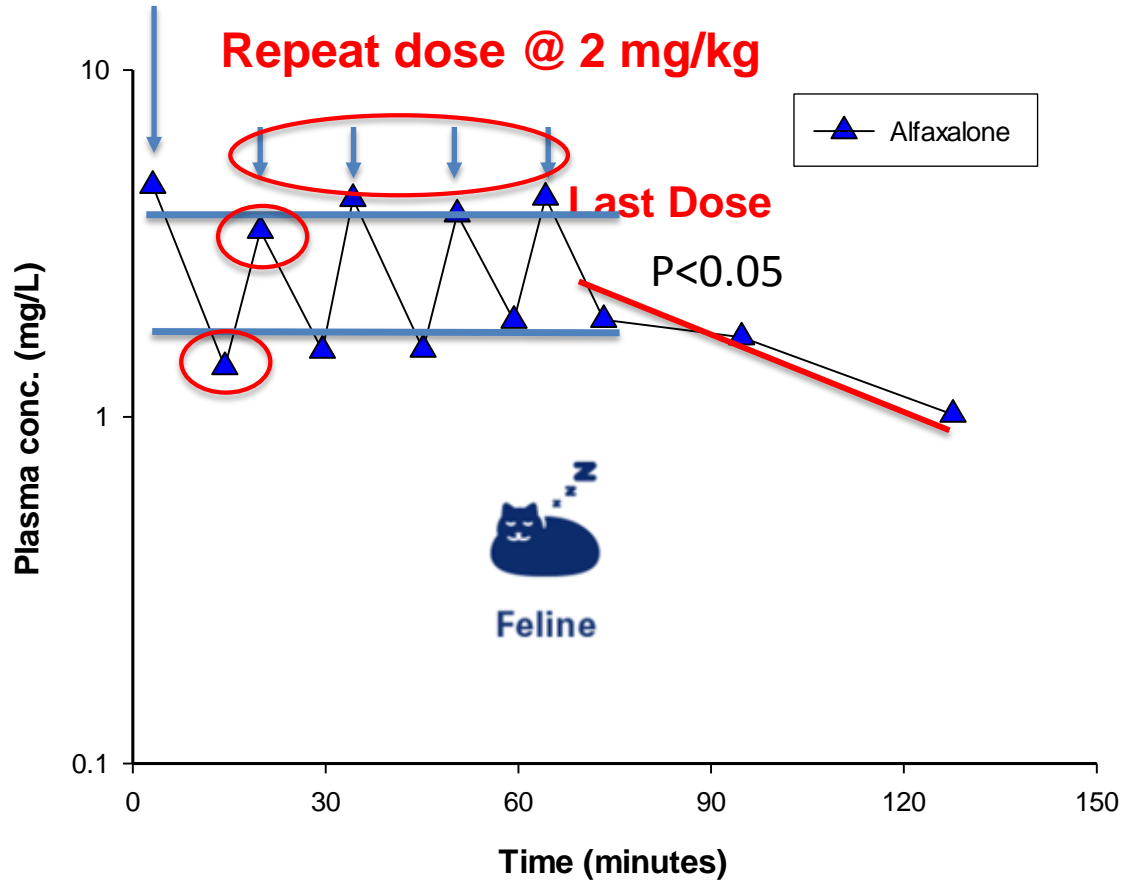
\*Cardiac Output (HR X SV) = 116 and 146 mL kg<sup>-1</sup> min<sup>-1</sup> in dog and cat, respectively

# No Accumulation – CRI - Dog



# No Accumulation – Repeat Dose

## Loading Dose @ 5 mg/kg



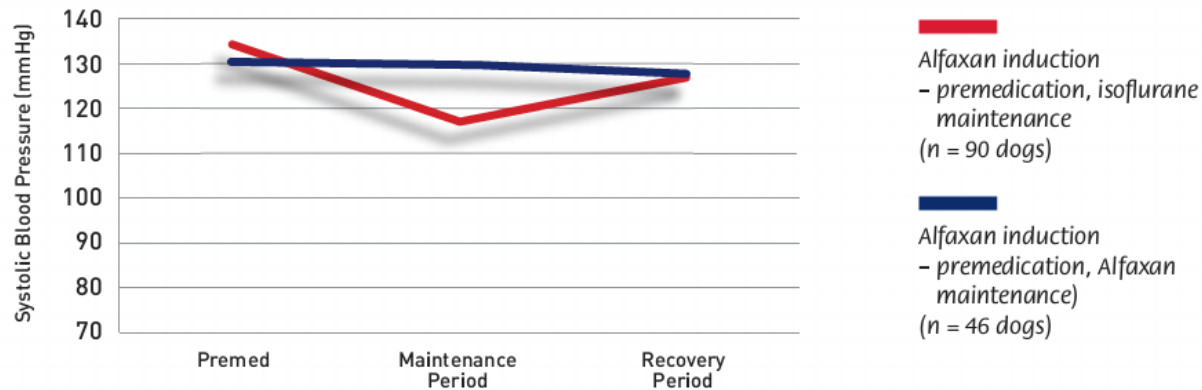
# Drug Interaction Study

Drug Class	Example Drug(s)
Anticholinergics	atropine, glycopyrrolate
Benzodiazepines	midazolam, diazepam
Opioid – pure $\mu$ agonist	morphine, methadone, hydromorphone, fentanyl
Opioid – mixed $\mu$ agonist/antagonists	butorphanol, buprenorphine
Phenothiazines	acepromazine
Alpha 2 adrenergic agonists	medetomidine, dexmedetomidine

# Blood Pressure Effect

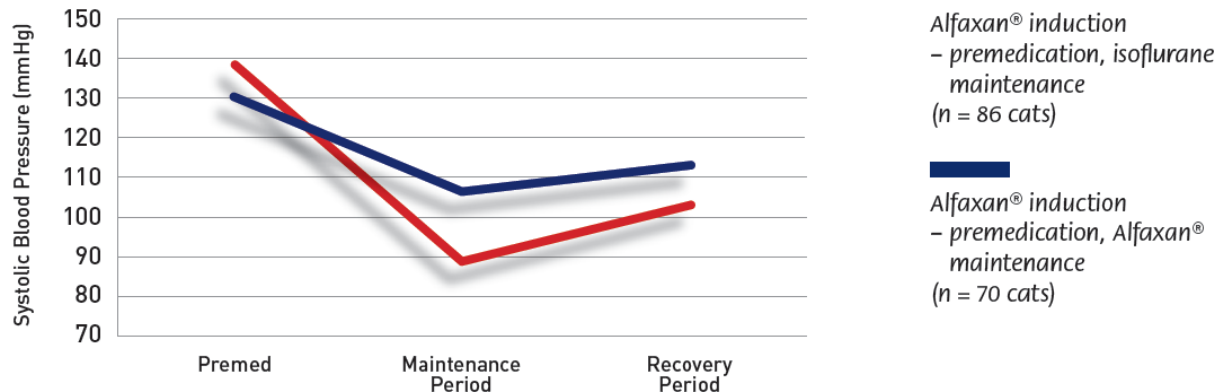
Mean of observed systolic blood pressures by anesthetic period

(Canine Multisite Clinical Trial)



Mean of observed systolic blood pressures by anesthetic period

(Feline Multisite Clinical Trial)

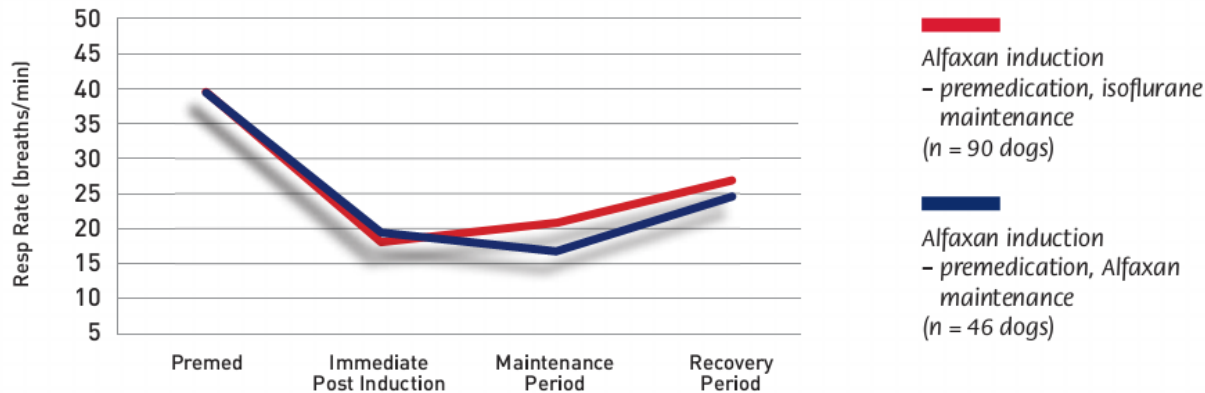




# Respiratory Rate Effect

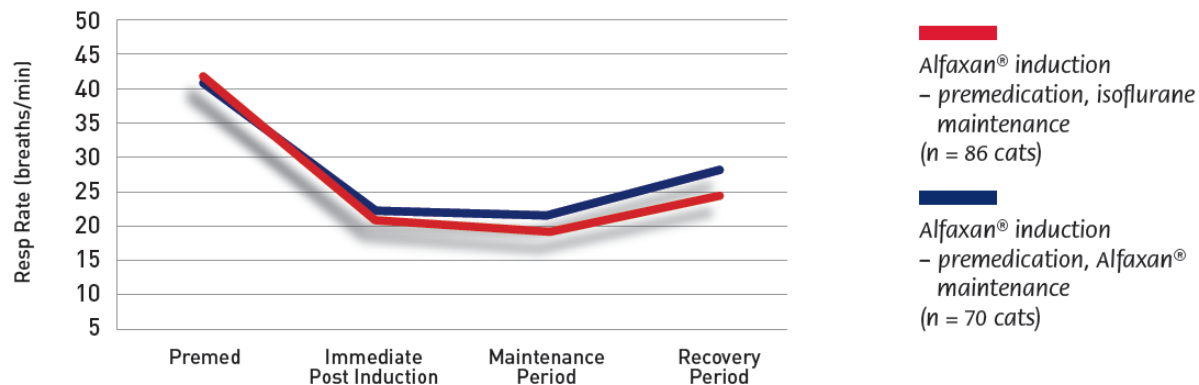
Mean of observed respiratory rates by anesthetic period

(Canine Multisite Clinical Trial)



Mean of observed respiratory rates by anesthetic period

(Feline Multisite Clinical Trial)

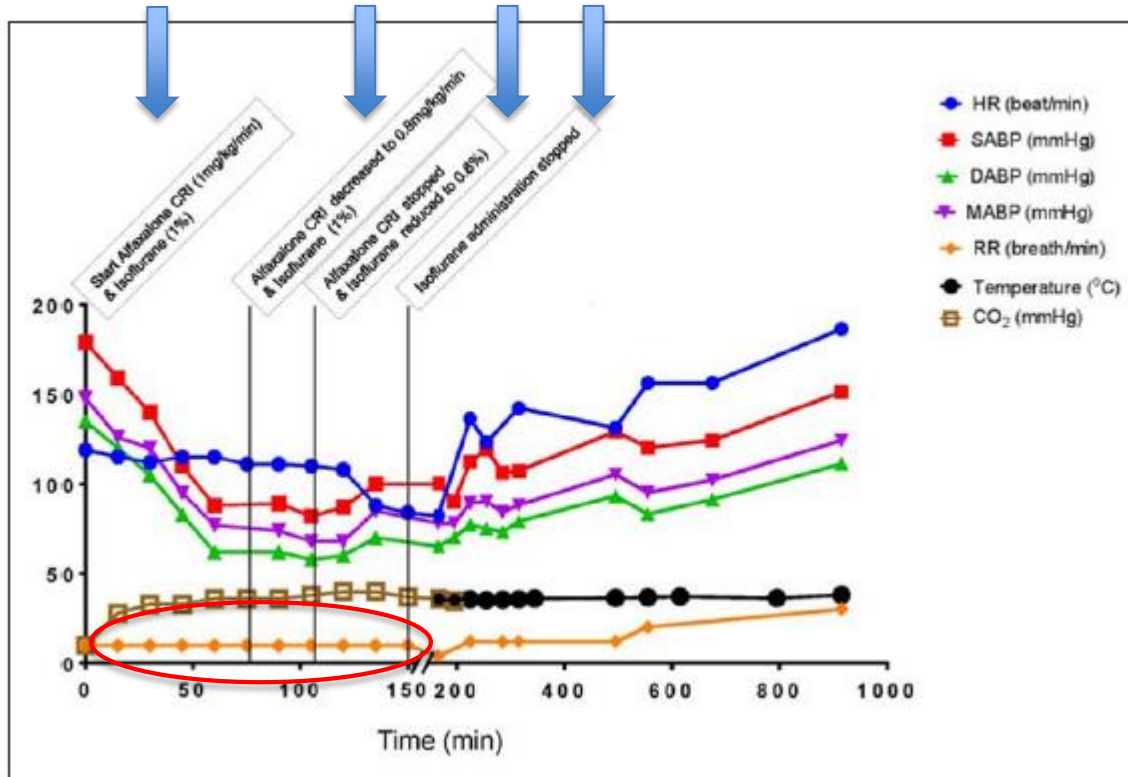


# Accidental Overdose!

Case Report



jms  
OPEN  
REPORTS



Cat recovered and sent home next day

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# Dose Administration

- When first using Alfaxan, draw up the full dose
- Divide the dose into 4 equal volumes
- $\frac{1}{4}$  dose q 15 seconds and patient “chooses” the dose

Dogs	Cats
Healthy, Not premedicated*	Healthy, Not premedicated*
<b>2 mg/kg</b> <b>Alfaxan</b> administered IV	<b>5 mg/kg</b> <b>Alfaxan</b> administered IV

- Premedication may alter the dose requirement of Alfaxan
- Anesthesia can be prolonged by further administration

# Duration of Anesthesia



Canine

- 2 mg/kg (1X) IV will produce approximately 5-10 min of anaesthesia (unpremedicated and undisturbed)



Feline

- 5 mg/kg (1X) IV will produce approximately 15-30 min of anaesthesia (unpremedicated and undisturbed)

# Anesthetic Potency and Volume

Drug	Approximate Dose (mg/kg) Potency	Approximate Duration of Effect (min)	Concentration (mg/mL)	Volume IV* (mL)
Thiopental	15	10	25	6
Propofol	6	5	10	6
Alfaxalone	2	5	10	2
Etomidate	2	10	2	10
Ketamine + diazepam	10/0.5	15	100/5	2 (1+1)
Tiletamine +zolazepam	5/5 (10)	30	50/50 (100)	1

\*Dose based on a 10 kg dog

# Alfaxan Induction





# Recovery from Alfaxan



# Versatility That Fits Your Patients

- Alfaxan is your clear choice for induction in ALL of your patients



Feline



Canine



C-Section



ASA III-IV



Sensitive Breeds



Puppies & Kittens










TIVA



EXOTICS

# Co-Morbidities

Co Morbidity Type	What's the problem?	Author and Forum	Okay
Elderly Patient	Less physiological reserve	Lukasik, V (WVC, 2016)	
Obesity	CV, Pulmonary, Type II Diabetes etc.	Lukasik, V (WVC, 2016)	
Liver Disease	Metabolism altered	Strunin, 1977 (humans)	
Kidney Disease	Clearance decreased	Sear JW, 1979 (humans) Lukasik (WVC, 2016)	
Cardiac Disease (valvular and hypertrophic)	Cardiac output, automaticity and perfusion	Caulkett, N (IVECCS, 2016) Mama, K (Clinician's Brief, AUG 2016)	
Diabetes	Glucose metabolism	Lukasik, V (WVC, 2016) Munoz, K (AVA, Sep, 2016)	
Status Epilepticus	Functional disruption of neuronal APs	Gianotti, G (personal communication)	

# Multiple Attributes



**Approved for both cats and dogs**

**Compatible with all  
premedicant drugs**

**Rapid and smooth Induction**

**Excellent muscle relaxation**

**No pain upon injection**

**No tissue irritation**



**Minimal disruption to cardiovascular  
& pulmonary function**

**Approved for induction and  
maintenance of anesthesia**

**Wide margin of safety**

**Rapid elimination from the body**

**Safe, consecutive day administration**

# Alfaxan<sup>®</sup> is proven.

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SMART

SAFE

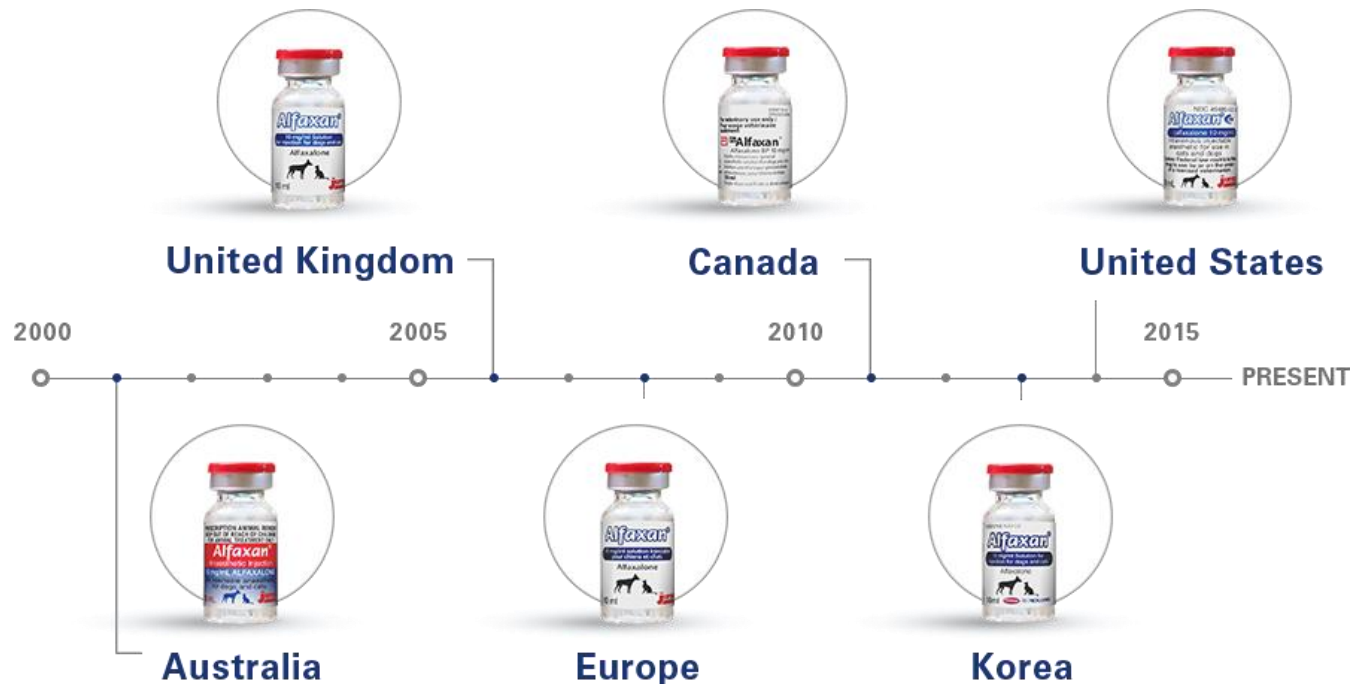
VERSATILE

PROVEN

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# Proven Over 15 Years In Market

- Alfaxan was first manufactured and launched by Jurox in Australia and New Zealand in 2001



# Who is **Jurox** INC ?

- Family-owned global animal health company
  - Dr. John O'Brien & Family
- Veterinary-exclusive products
  - Over 120 small & large animal health products
  - Shipping to over 30 countries
  - FDA compliant manufacturing plant for cGMP





# Proven & Approved for Cats and Dogs

- Registered in multiple countries & administered to millions of cats and dogs globally.
- Approved by the VDD, commercially available since 2011.
- All Alfaxan is manufactured at the same site in Australia



# Hospital Support

- On demand or live Webinar with a Jurox Veterinarian (me) <http://www2.jurox.com/AlfaxanWebinar>
- <http://www2.jurox.com/AlfaxanShort>
- <http://www2.jurox.com/AlfaxanLong>
- <http://www2.jurox.com/ca/alfaxan-resource-guide.pdf>
- [www.alfaxan.com](http://www.alfaxan.com)
- Timely responses to technical questions and or adverse events [kirby.pasloske@jurox.com](mailto:kirby.pasloske@jurox.com)
- Customer Service through
  - Central Sales (1-800-387-2522)
  - Pacific Veterinary Sales (1-800-663-6966)



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