

Table 1. Commonly used sedatives and anesthetics in amphibians based on the literature and presenter's experience

**TRICAINE METHANESULFONATE (MS222)**

SPECIES	INDUCTION CONCENTRATION	COMMENTS
Rio Cauca caecilians ( <i>Typhlonectes natans</i> )	1 g/L	Anesthetic duration of 70-160 minutes
Axolotl ( <i>Ambystoma mexicanum</i> )	2-4 g/L	Surgical anesthesia for 15-30 minutes
Tiger salamander ( <i>Ambystoma tigrinum</i> )	0.5-1 g/L	Anesthetic duration 35-43 minutes
Argentinian horned frog ( <i>Ceratophrys ornata</i> )	0.25-0.5 g/L	Surgical anesthesia for 10-15 minutes
Marine toad ( <i>Bufo marinus</i> )	2 g/L	Anesthetic duration 80-100 minutes
White's tree frog ( <i>Litoria caerulea</i> )	0.5-2 g/L	Lower dose-diagnostics; higher dose-surgery
Waxy monkey tree frog ( <i>Phyllomedusa sauvagii</i> )	1-3.3 g/L	Surgical anesthesia for 15-20 minutes
Leopard frog ( <i>Lithobates</i> spp.)	0.5-1 g/L	Anesthetic duration 60-80 minutes
African clawed frog ( <i>Xenopus laevis</i> )	1-2 g/L	Anesthetic duration 30-60 minutes

## BENZOCAINE

SPECIES	INDUCTION CONCENTRATION	COMMENTS
Red-spotted newts ( <i>Notophthalmus viridescens</i> )	2 g/L	Anesthetic duration of 20 minutes
Tiger salamander ( <i>Ambystoma tigrinum</i> )	0.2 g/L	Rapid induction but long recoveries
Marine toad ( <i>Bufo marinus</i> )	1 g/L	Surgical anesthesia achieved
Leopard frog ( <i>Lithobates</i> spp.)	2.3 mg/g BW	67% induction and <50% surgical anesthesia
African clawed frog ( <i>Xenopus laevis</i> )	1 g/L	Anesthetic duration 40 minutes

BW: bodyweight

## CLOVE OIL (NOT RECOMMENDED)

SPECIES	INDUCTION CONCENTRATION	COMMENTS
Tiger salamander ( <i>Ambystoma tigrinum</i> )	450 mg/L	Surgical anesthesia 67%
Leopard frog ( <i>Lithobates</i> spp.)	255 mg/L	67% induction <50% surgical anesthesia
African clawed frog ( <i>Xenopus laevis</i> )	350 mg/L	Surgical anesthesia 15-30 minutes

## INHALANT HALOGENS

ROUTE	CONCENTRATION	COMMENTS
Immersion	2-3 ml/L	
Topical gel	0.025-0.04 ml/gm BW	1:1:0.5 Isoflurane to water soluble gel to water 48-80 minutes of anesthesia time

BW: bodyweight

## ALFAXALONE

SPECIES	INDUCTION DOSAGE	COMMENTS
Spanish ribbed newt ( <i>Pleurodeles waltl</i> )	15-30 mg/kg IM	Loss of righting reflex but responsive to noxious stimuli
American bullfrog ( <i>Lithobates catesbeianus</i> )	10-17.5 mg/kg IM	Responsive to noxious stimuli
Oriental fire-bellied toad ( <i>Bombina orientalis</i> )	2 g/L immersion	10-30 minutes of sedation
Green tree frog ( <i>Litoria caerulea</i> )	30 mg/kg IM	25-90 minutes of sedation
Green and golden bell frog ( <i>Litoria aurea</i> )	20 mg/kg IM	40-60 minutes of sedation
Most species	20-30 mg/kg IM	Effective dosage in a clinical setting

IM: intramuscular

## PROPOFOL

SPECIES	INDUCTION CONCENTRATION	COMMENTS
White's tree frog ( <i>Litoria caerulea</i> )	9.5 mg/kg ICe	Sedation
White's tree frog ( <i>Litoria caerulea</i> )	30 mg/kg ICe	Anesthesia (Death at 53 mg/kg)
Tiger salamander ( <i>Ambystoma tigrinum</i> )	25 mg/kg ICe	40% anesthesia
Tiger salamander ( <i>Ambystoma tigrinum</i> )	35 mg/kg ICe	83% anesthesia

ICe: intracoelomic

## ETOMIDATE

SPECIES	INDUCTION CONCENTRATION	COMMENTS
Clawed frogs ( <i>Xenopus</i> spp.)	22.5 mg/L immersion	Induction within 15 minutes, 30 minute duration

## ALPHA-2 AGONISTS + ALFAXALONE

SPECIES	INDUCTION CONCENTRATION	COMMENTS
White's tree frog <i>(Litoria caerulea)</i> Leopard frog <i>(Lithobates spp.)</i> Houston toad <i>(Bufo houstonensis)</i>	Dexmedetomidine (0.07-0.1 mg/kg) Alfaxalone (10-20 mg/kg)	
Blue poison dart frog <i>(Dendrobates tinctorius azureus)</i>	Dexmedetomidine (5 mg/kg) Alfaxalone (20 mg/kg) Midazolam (40 mg/kg)	Reverse with atipamizole (50 mg/kg) and flumazenil (0.05 mg/kg)