

9.11 MORPHINE / MORPHINE GLUCURONIDES

TYPE OF DRUG: Plant substance

REGULATORY ANALYTE: Morphine

PENALTY CLASS: B

THRESHOLD/REGULATORY LIMIT: 100 ng/ml, in urine

Morphine is an ARCI Uniform Classification Guidelines for Foreign Substances Class 1 and Penalty Class B substance. In the United States, a number of thresholds/regulatory limits are currently in place for Morphine as Morphine glucuronides, the major urinary metabolites of this ARCI Class 1 substance. Morphine is a not uncommon addition to human foodstuffs as poppy seeds and also a potential environmental substance. The threshold/regulatory limit in Louisiana under their trace common substance rule is Negative or less than limit of detection in blood, and 120 ng/ml in urine. In Oklahoma, it is 100 ng/ml. A slightly lower (50 ng/ml) limit is in place in Ohio (1999 & 2009) and Washington, and more recently, in the United Kingdom. These thresholds/regulatory limits are supported by research from the Horseracing Forensic Laboratory (HFL) in England,³⁵ which shows urinary concentrations of 110 ng/ml after administration to horses of 2-gram doses of poppy seeds containing 3 µg of morphine per dose. These thresholds/regulatory limits are dramatically lower than the 2,000-ng/ml "cut-off" in place in human workplace medication testing, and Morphine glucuronide thresholds/regulatory limits that are in place in several other jurisdictions.³⁶

IN-PLACE REGULATORY THRESHOLDS

Medication	Conc.	Fluid	Jurisdiction	Year	Ref.
Morphine	100 ng/ml	urine	Oklahoma	2010	appendix VIII ⁷¹
Morphine	50 ng/ml	urine	Minnesota	2010	appendix VIII ⁷⁰
Morphine	50 ng/ml	urine	Ohio	present 1999, updated 2011	appendix VIII ⁵⁷
Morphine	50 ng/ml	urine	Washington	2008	appendix VIII ⁴²
Morphine	120 ng/ml	urine	Louisiana	2011	appendix VIII ¹²⁰
Morphine	< LOD	blood	Louisiana	2011	appendix VIII ⁴⁸

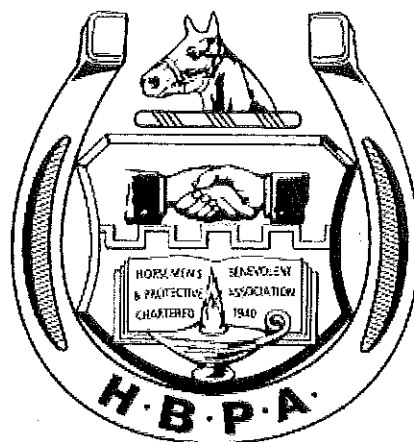
TOBA TESTING

Under TOBA guidelines, testing for Morphine is mandatory, with a minimum testing sensitivity of 20 ng/ml in urine. The analyte detected is Morphine.¹¹⁴

THRESHOLD LINKED WITHDRAWAL TIME GUIDELINES

While Morphine is an environmental substance, it could conceivably be used as a therapeutic medication; however, to our knowledge, no rigorously determined and published withdrawal time guidelines linked to a standardized therapeutic dosage of Morphine at the above threshold/regulatory limit are available at this time.

World Rules for Equine Drug Testing & Therapeutic Medication Regulation



**2012 Policy of the
National Horsemen's Benevolent
and Protective Association, Inc.**

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