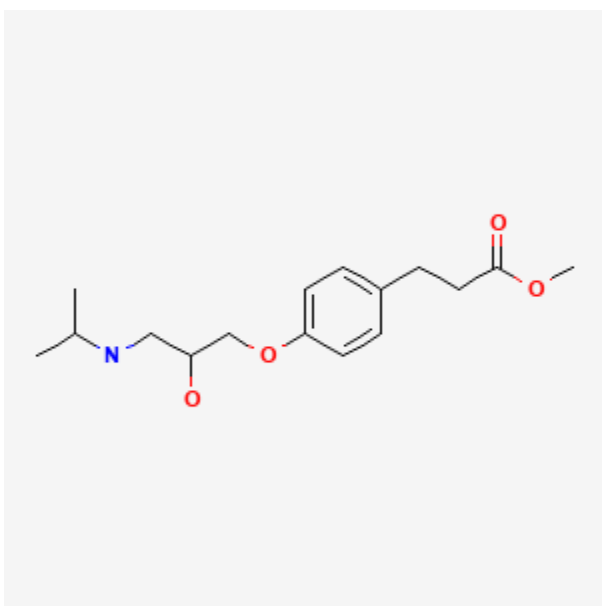




## Esmolol

Revised: February 15, 2021.

CASRN: 81147-92-4



## Drug Levels and Effects

### Summary of Use during Lactation

Based on its physicochemical properties and extremely short half-life, esmolol would not be expected to cause any adverse effects in breastfed infants.

### Drug Levels

The excretion of beta-adrenergic blocking drugs into breastmilk is largely determined by their protein binding. Those with low binding are more extensively excreted into breastmilk.[1] Accumulation of the drugs in the infant is related to the fraction excreted in urine. With 55% protein binding, less than 1% renal excretion and an extremely short half-life of less than 10 minutes, esmolol presents no risk for accumulation in infants.

**Disclaimer:** Information presented in this database is not meant as a substitute for professional judgment. You should consult your healthcare provider for breastfeeding advice related to your particular situation. The U.S. government does not warrant or assume any liability or responsibility for the accuracy or completeness of the information on this Site.

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*Maternal Levels.* Relevant published information was not found as of the revision date.

*Infant Levels.* Relevant published information was not found as of the revision date.

## Effects in Breastfed Infants

A study of mothers taking beta-blockers during nursing found a numerically, but not statistically significant increased number of adverse reactions in those taking any beta-blocker. Although the ages of infants were matched to control infants, the ages of the affected infants were not stated. None of the mothers were taking esmolol.[2]

## Effects on Lactation and Breastmilk

Relevant published information on the effects of beta-blockade or esmolol during normal lactation was not found as of the revision date. A study in 6 patients with hyperprolactinemia and galactorrhea found no changes in serum prolactin levels following beta-adrenergic blockade with propranolol.[3]

## Alternate Drugs to Consider

Propranolol, Labetalol, Metoprolol

## References

1. Riant P, Urien S, Albengres E, et al. High plasma protein binding as a parameter in the selection of betablockers for lactating women. *Biochem Pharmacol.* 1986;35:4579–81. PubMed PMID: 2878668.
2. Ho TK, Moretti ME, Schaeffer JK, et al. Maternal beta-blocker usage and breast feeding in the neonate. *Pediatr Res.* 1999;45(4, pt. 2):67A–Abstract 385. doi: [10.1203/00006450-199904020-00402](https://doi.org/10.1203/00006450-199904020-00402).
3. Board JA, Fierro RJ, Wasserman AJ, et al. Effects of alpha- and beta-adrenergic blocking agents on serum prolactin levels in women with hyperprolactinemia and galactorrhea. *Am J Obstet Gynecol.* 1977;127:285–7. PubMed PMID: 556882.

## Substance Identification

### Substance Name

Esmolol

### CAS Registry Number

81147-92-4

### Drug Class

Breast Feeding

Lactation

Antihypertensive Agents

Adrenergic Beta-Antagonists

Antiarrhythmics