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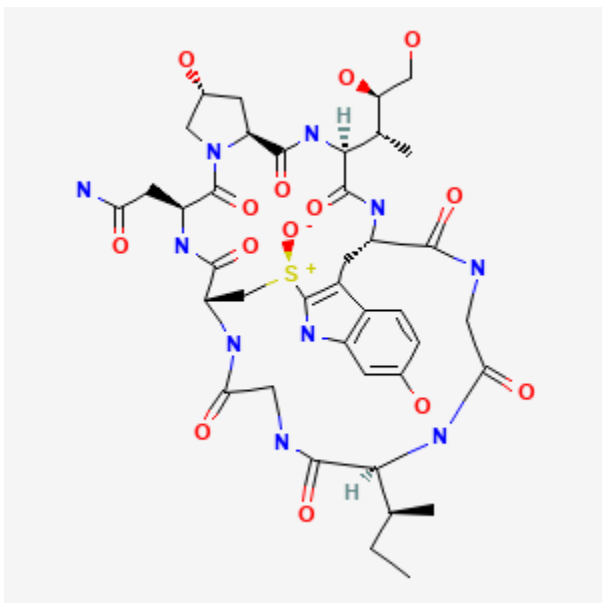
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## Amanita Mushroom Poisoning

Revised: June 15, 2024.

CASRN: 23109-05-9



## Drug Levels and Effects

### Summary of Use during Lactation

Amatoxins are water soluble, heat stable polypeptides found in *Amanita* (most often *Amanita phalloides*), *Galerina* and some *Lepiota* species. The main toxin from the species *A. phalloides* is alpha-amanitin, a cyclic octapeptide. It is a potent inhibitor of RNA polymerases that blocks the production of mRNA and protein synthesis in liver and kidney cells.[1] In one case, an infant developed elevated liver enzymes after nursing once 11.5 hours after maternal ingestion of *Amanita phalloides*. However, two recent, well-documented cases found no adverse effects in breastfed infants and no amatoxin in the milk. Nevertheless, mothers suspected of having *Amanita* mushroom poisoning probably should not breastfeed until they have recovered or toxicologic screening of the breastmilk has ruled out toxicity.

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## Drug Levels

*Maternal Levels.* A 32-year-old mother shared a meal of foraged mushrooms (*Amanita bisporigera*), and developed symptoms 15 hours post-ingestion. Amatoxin was undetectable in the milk, although the timing of the milk sample was not stated.[2]

A 33-year-old woman picked about 200 mushrooms in the forest in France. She cooked and ate some of them, then breastfed her 5-month-old daughter 3 times a day over the next 36 hours. The mushrooms were identified as mainly *Amanita phalloides* along with *Paxillus involutus*, *Amanita rubescens*, and *Chlorophyllum rhacodes*. The mother's urine collected in the emergency department was positive for amatoxin. A breastmilk sample collected 41 hours postingestion had no detectable amatoxin by LC-MS/MS.[3]

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

## Effects in Breastfed Infants

In Germany, a 20-year-old nursing mother ate a meal of solely mushrooms identified in the report as green tuberous mushroom (*Amanita phalloides*). The next morning around 11.5 hours after mushroom ingestion, she nursed her 10-week-old infant who weighed 5 kg. The meal consisted of 80 to 100 mL of breastmilk and the same amount of ready-to-use infant formula (Milasan-Neu). At this time the mother already had symptoms of intoxication (vomiting and diarrhea). Because of the deterioration in her condition she was unable to continue breastfeeding the child, so the child received only formula thereafter. After the mother was admitted to the hospital for *Amanita phalloides* poisoning and had ASAT and ALAT values of 10,000 and 40,000, respectively (normal values about 500-550). The infant was placed under inpatient observation at children's hospital. The infant's relatives noticed nothing unusual about the child and the clinical admission examination revealed no visible evidence of a hepatic, cerebral or hematological disease. Six days after maternal mushroom ingestion, the infant's laboratory values (electrolytes, serum electrophoresis, bilirubin, gamma-GT, alkaline phosphatase, creatinine, blood sugar, urine status, PTT, and PT [Quick test]) were normal except for ASAT and ALAT, which were about double the normal value. These values slowly decreased and became normal at about day 40 after ingestion.[4]

A 32-year-old mother shared a meal of foraged mushrooms (*Amanita bisporigera*), and developed symptoms 15 hours post-ingestion. She presented to the emergency department 29 hours post-ingestion and was found to have markedly elevated liver enzymes. Her 4 month-old-daughter had breastfed 4 hours post-ingestion. The asymptomatic infant was evaluated 48 hours after breastfeeding and discharged from the emergency department with no evidence of hepatotoxicity.[2]

A 33-year-old woman picked about 200 mushrooms in a forest in France. She cooked and ate some of them, and developed nausea, vomiting and diarrhea 11 hours post-ingestion. She was admitted to the hospital for treatment and had elevated liver enzymes. She had breastfed her 5-month-old daughter 3 times a day over the 36 hours after mushroom ingestion. Her daughter was hospitalized, but did not present any symptoms, nor any biological disturbance.[3]

## Effects on Lactation and Breastmilk

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

## References

1. Hydzik P, Bielanski W, Ponka M, et al. Usefulness of <sup>13</sup>C-methacetin breath test in liver function testing in *Amanita phalloides* poisoning; breast feeding woman case. Clin Toxicol (Phila) 2008;46:1077-82. PubMed PMID: 18821093.

2. Shively RM, Nogar JN, Rella JG, et al. Got milk? A case series of an amatoxin-exposed family, including a breastfeeding mother and infant. *Clin Toxicol (Phila)* 2020;58:148-9. PubMed PMID: 31070058.
3. Galland J, Bourdic F, Yaouanc B, et al. Comment on Got milk? A case series of an amatoxin-exposed family, including a breastfeeding mother and infant. *Clin Toxicol (Phila)* 2021;59:770. PubMed PMID: 33475424.
4. Hallebach M, Kurze G, Springer S, et al. Knollenblätterpilzvergiftung über muttermilch. *Z Klin Med* 1985;40:943-5.

## Substance Identification

### Substance Name

Amanita Mushroom Poisoning

### Scientific Name

*Amanita phalloides*

### CAS Registry Number

11030-71-0 23109-05-9 58250-15-0

### Drug Class

Breast Feeding

Lactation

Milk, Human

Foodborne Diseases

Poisoning