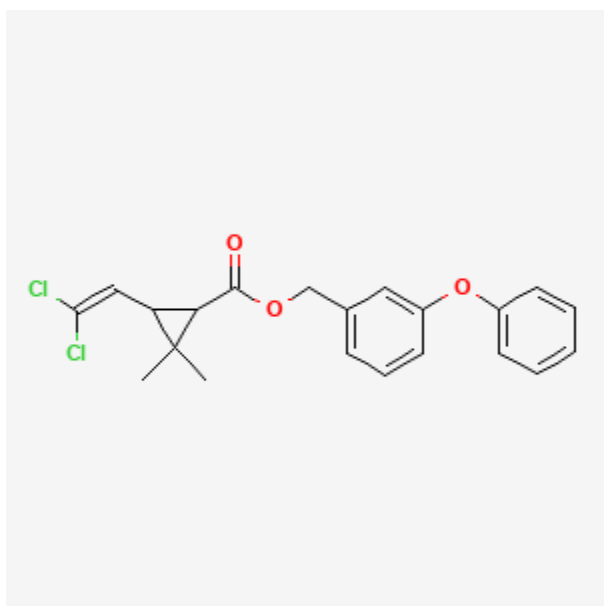




Permethrin

Revised: September 15, 2023.

CASRN: 52645-53-1



Drug Levels and Effects

Summary of Use during Lactation

Because less than 2% is absorbed after topical application, rapid metabolism to inactive metabolites and safe application directly on infants' skin, topical permethrin products are acceptable in nursing mothers.[1-3] Extensive exposure, such as from agricultural use or malaria control might have long-term health concerns because residues can be found in breastmilk.[4] Only water-miscible cream, gel or liquid products should be applied to the breast because ointments may expose the infant to high levels of mineral paraffins via licking.[5]

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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Drug Levels

Maternal Levels. Permethrin was measured in 53 breastmilk samples from 29 mothers collected 1998 to 1999 in Basel Switzerland. Permethrin was detected in 25 milk samples, even in mothers from households that reported no permethrin use. The average permethrin concentration was 74 mcg/kg of fat (range undetectable [<60 mcg/kg] to 152 mcg/kg fat).[6]

Permethrin was found in the breastmilk of nursing mothers in 3 South African towns. Average levels in breastmilk ranged from 8.3 to 48.4 mcg/L in the 3 towns. The source was thought to be from a dusting powder widely available and used in gardening. The dosage and route of exposure (i.e., topical, inhalation, oral) could not be determined. All milk levels were below the allowable daily limit for permethrin.[7,8]

Samples of mature milk were collected in 2002 from 22 mothers in Mozambique where pyrethrins were used for mosquito control in the thatching of homes from 1993 to 2000 and continued to be used in bed netting after this period. The average permethrin concentration in the milk samples was 79 mcg/kg of lipid; the median concentration was 55 mcg/kg of lipid (range 10 to 230 mcg/kg of lipid). The milk permethrin levels in all mothers were below the allowable daily limit for permethrin.[9]

Breastmilk samples from mothers in Brazil, Colombia and Spain were analyzed for pyrethroids. Permethrin was detected in all samples, regardless of reported household usage. Samples from rural Brazil (n = 9) contained a mean permethrin concentration of 3.57 ng/gram of lipid. Samples from Sao Paulo (n = 8) contained a mean permethrin concentration of 0.36 ng/gram of lipid. Samples from Santiago de Cali, Colombia (n = 27) contained a mean permethrin concentration of 0.91 ng/gram of lipid. Samples from Barcelona, Spain (n = 6) contained a mean permethrin concentration of 2.2 ng/gram of lipid. Other pyrethroids were also detected, but estimated daily intakes by breastfed infants were all below acceptable daily intake limits.[10]

Breastmilk samples from 79 women from a lactation study at the University of California Davis had their breastmilk tested for the presence of trans-permethrin on day 42 postpartum. The mean concentration found was 7.8 mcg/L (range 0.43 to 150.3 mcg/L).[11]

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

Effects in Breastfed Infants

In a telephone follow-up study, 5 mothers who used permethrin during breastfeeding reported no adverse reactions in their breastfed infants.[12]

Effects on Lactation and Breastmilk

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

Alternate Drugs to Consider

Ivermectin, Pyrethrins

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Substance Identification

Substance Name

Permethrin

CAS Registry Number

52645-53-1

Drug Class

Breast Feeding

Lactation

Milk, Human

Anti-Infective Agents

Antiparasitic Agents

Insecticides