



## Seaweed

Revised: December 3, 2018.

CASRN: 84775-78-0

## Drug Levels and Effects

### Summary of Use during Lactation

Kelp (*Fucus vesiculosus*, other *Fucus* species, and *Ascophyllum nodosum*), also known as bladderwrack, consists of the dried whole plant. It contains soluble fiber (e.g., alginic acid), vitamin B12, iron and iodine. It can also contain heavy metals (e.g., arsenic, cadmium, lead). Brown seaweed (*Undaria pinnatifida*) is a purported galactagogue in some Asian cultures; however, no scientifically valid clinical trials support this use.

Galactagogues should never replace evaluation and counseling on modifiable factors that affect milk production. [1] No data exist on the excretion of any organic components of seaweed into breastmilk; however, iodine is actively transported into breastmilk and heavy metals are excreted into milk. For further information on iodine in breastmilk and its potential adverse effects, see the iodine record in LactMed. Some sources recommend against using seaweed during breastfeeding because of its high iodine content,[2][3][4] and potential contamination with heavy metals.

Dietary supplements do not require extensive pre-marketing approval from the U.S. Food and Drug Administration. Manufacturers are responsible to ensure the safety, but do not need to *prove* the safety and effectiveness of dietary supplements before they are marketed. Dietary supplements may contain multiple ingredients, and differences are often found between labeled and actual ingredients or their amounts. A manufacturer may contract with an independent organization to verify the quality of a product or its ingredients, but that does *not* certify the safety or effectiveness of a product. Because of the above issues, clinical testing results on one product may not be applicable to other products. More detailed information [about dietary supplements](#) is available elsewhere on the LactMed Web site.

### Drug Levels

Iodine is a normal component of human milk. Median values of total iodine (including iodide) in breastmilk in the United States have ranged from 35 to 140 mcg/L.[5]

*Maternal Levels.* Korean mothers are traditionally given large amounts of brown seaweed soup postpartum, up to 4 or 5 times daily in the first few days postpartum. A study of 50 Korean postpartum mothers measured the amount of iodine in their breastmilk. At 2 to 5 days postpartum, iodine content averaged 2170 mcg/L (range 218

to 8671 mcg/L) or 2.7 mg daily. At 4 weeks postpartum when the seaweed intake was less, iodine averaged 892 mcg/L (range 60 to 3838 mg/L) or 1.3 mg daily.[6]

The breastmilk of the mothers of 31 preterm Korean infants was measured for iodine concentration on week 1, 3 and 6 postpartum. Korean mothers often have elevated iodine levels from large amounts of dietary iodine in brown seaweed soup during the first month postpartum. Median breastmilk iodine levels were 2529, 1153 and 822 mcg/L at the 3 times, respectively.[7]

*Infant Levels.* The preterm infants of Korean mothers with high levels of breastmilk iodine had relatively high urinary iodine levels that were thought to be related to high maternal intake of iodine from seaweed soup.[7]

## Effects in Breastfed Infants

A study of 31 preterm infants born at 34 weeks gestational age or less was performed in Korea where mothers typically ingest large amounts of seaweed soup during the first month postpartum. Subclinical hypothyroidism was frequently found in the infants that had high intakes of iodine from breastmilk.[7]

Two mothers originally from Asia (Korea and China) reportedly ate large amounts of soup made from seaweed from their home countries in the postpartum period. Their infants had elevated thyrotropin (TSH) levels when tested at 3 to 4 weeks of age and signs of hypothyroidism. Both were treated with thyroid hormones and regained normal thyroid function.[8]

A 21-day-old breastfed (extent not stated) infant presented with unconjugated hyperbilirubinemia. Neonatal TSH screening was normal, but at 21 days it was 87.3 IU/L (normal 0.27 to 4.2 IU/L). Free T4 was 7.3 pmol/L (normal 12 to 22 pmol/L) and the thyroid was slightly enlarged. The infant's parents were of Korean origin and the mother had consumed 3 to 4 bowls of brown seaweed (*Undaria pinnatifida*) soup daily from the time of birth. The infant's hypothyroidism was probably caused by the high iodine content of the seaweed soup.[9]

## Effects on Lactation and Breastmilk

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

## References

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## Substance Identification

### Substance Name

Seaweed

### Scientific Name

Fucus vesiculosus Undaria pinnatifida

### CAS Registry Number

84775-78-0

### Drug Class

Breast Feeding

Lactation

Complementary Therapies

Food

Phytotherapy

Plants, Medicinal