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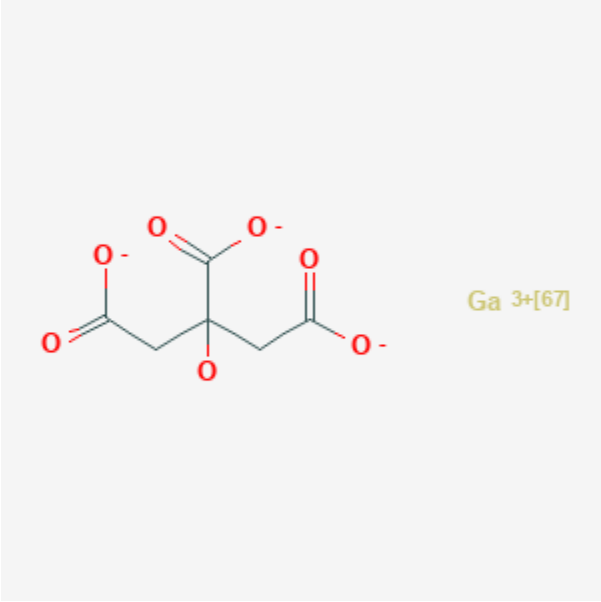
Gallium Citrate Ga 67

Revised: June 30, 2019.

CASRN: 41183-64-6



Drug Levels and Effects

Summary of Use during Lactation

Information in this record refers to the use of Ga 67 citrate as a diagnostic agent. The United States Nuclear Regulatory Commission states that breastfeeding should be interrupted temporarily after administration of Ga 67 citrate to a nursing mother. The duration of breastfeeding interruption depends on the dose administered (see table).[1] Several international radiation safety organizations recommend discontinuation of breastfeeding for more than 3 weeks or complete cessation of breastfeeding after Ga 67 citrate after a dose of 200 mBq or greater.[2][3][4] Those receiving the higher doses might have to permanently discontinue breastfeeding this infant.[5][6]

During the period of interruption, the breasts should be emptied regularly and completely. If the mother has expressed and saved milk prior to the examination, she can feed it to the infant during the period of nursing interruption.[4][5] The milk that is pumped by the mother during the time of breastfeeding interruption can

either be discarded or[5][7] stored frozen and given to the infant after 10 physical half-lives, or about 33 days, have elapsed.

Mothers concerned about the level of radioactivity in their milk could ask to have it tested at a nuclear medicine facility at their hospital. When the radioactivity is at a safe level she may resume breastfeeding. A method for measuring milk radioactivity and determining the time when a mother can safely resume breastfeeding has been published.[6] Mothers who receive a dose less than 190 MBq for an inflammation scan need not refrain from close contact with their infants.[8]

Dose	Duration of Interruption[1]
150 MBq (4 mCi)	1 month
50 MBq (1.3 mCi)	2 weeks
7 MBq (0.2 mCi)	1 week

Drug Levels

Ga 67 decays by electron capture with principal photon energies of 93.3, 184.6 and 300.2 keV, and a physical half-life of 3.261 days.[1] The effective half-life of gallium 67 citrate ranges from 40 to 68 hours.[5][6]

Effects in Breastfed Infants

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

Effects on Lactation and Breastmilk

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

References

1. Howe DB, Beardsley M, Bakhsh S. Appendix U. Model procedure for release of patients or human research subjects administered radioactive materials. In, NUREG-1556. Consolidated guidance about materials licenses. Program-specific guidance about medical use licenses. Final report. U.S. Nuclear Regulatory Commission Office of Nuclear Material Safety and Safeguards. 2008;9, Rev. 2. Available at: http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1556/v9/r2/
2. Mattsson S, Johansson L, Leide Svegborn S et al. Radiation dose to patients from radiopharmaceuticals: A compendium of current information related to frequently used substances. Annex D. Recommendations on breast-feeding interruptions. Ann ICRP. 2015;44 (2 Suppl):319-21. PubMed PMID: 26069086.
3. International Atomic Energy Agency. Radiation Protection and Safety in Medical Uses of Ionizing Radiation, IAEA Safety Standards Series No. SSG-46, IAEA, Vienna. 2018. Available at: https://www.iaea.org/publications/11102/radiation-protection-and-safety-in-medical-uses-of-ionizing-radiation
4. National Radiation Protection Board (UK). Administration of radioactive substances advisory committee. Notes for guidance on the clinical administration of radiopharmaceuticals and use of sealed radioactive sources. 2019. Available at: https://assets.publishing.service.gov.uk/government/.../file/.../ARSAC_NfG_2019.pdf
5. Mountford PJ, Coakley AJ. A review of the secretion of radioactivity in human breast milk: data, quantitative analysis and recommendations. Nucl Med Commun. 1989;10:15-27. PubMed PMID: 2645546.
6. Stabin MG, Breitz HB. Breast milk excretion of radiopharmaceuticals: mechanisms, findings, and radiation dosimetry. J Nucl Med. 2000;41:863-73. PubMed PMID: 10809203.
7. Early PJ, Sodee DB. Principles and practice of nuclear medicine. 2nd ed. St. Louis. Mosby-Year Book, Inc. 1995:1380-1.

8. Mountford PJ, O'Doherty MJ. Exposure of critical groups to nuclear medicine patients. Appl Radiat Isot. 1999;50:89-111. PubMed PMID: 10028630.

Substance Identification

Substance Name

Gallium Citrate Ga 67

CAS Registry Number

41183-64-6

Drug Class

Breast Feeding

Lactation

Radiopharmaceuticals

Gallium Radioisotopes

Diagnostic Agents