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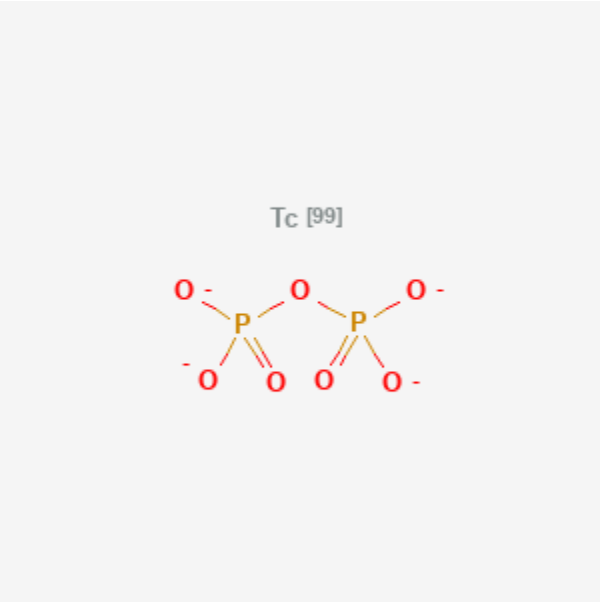
Technetium Tc 99m Pyrophosphate

Revised: November 15, 2023.

CASRN: 52997-54-3



Drug Levels and Effects

Summary of Use during Lactation

Information in this record refers to the use of technetium Tc 99m pyrophosphate (Tc 99m PYP) as a diagnostic agent. A US Nuclear Regulatory Commission subcommittee has recommended that nursing be discontinued for 24 hours after administration of all technetium Tc 99m diagnostic products to simplify guidance recommendations, although this time interval may be longer than necessary.[1] However, some experts recommend nursing the infant just before administration of the radiopharmaceutical and interrupting breastfeeding for 3 to 6 hours after the dose, then expressing the milk completely once and discarding it or store it for at least 60 hours (10 half-lives) before giving it to the infant. 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.[2-4]

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.[5]

For nursing mothers who work with Tc 99m substances in their workplace, there is no need to take any precautions other than those appropriate for general radiation protection.[6]

Drug Levels

Tc 99m is a gamma emitter with a principal photon energy of 140 keV and a physical half-life of 6.04 hours.[1] The effective half-life of Tc 99m PYP averages 3.5 hours.[5]

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

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3. Early PJ, Sodee DB. Principles and practice of nuclear medicine. 2nd ed. St Louis Mosby-Year Book, Inc 1995:1380-1.
4. ARSAC notes for guidance: Good clinical practice in nuclear medicine. Notes for guidance on the clinical administration of radiopharmaceuticals and use of sealed radioactive sources. 2020. Available at: https://www.gov.uk/government/publications/arsac-notes-for-guidance
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6. Almén A, Mattsson S. Radiological protection of foetuses and breast-fed children of occupationally exposed women in nuclear medicine - Challenges for hospitals. Phys Med 2017;43:172-7. PubMed PMID: 28882410.

Substance Identification

Substance Name

Technetium Tc 99m Pyrophosphate

CAS Registry Number

103601-29-2

Drug Class

Breast Feeding

Lactation

Milk, Human

Radiopharmaceuticals

Technetium Compounds

Diagnostic Agents