

“The stability of ertapenem solution in syringes at room, refrigerator, and freezer temperatures was determined to establish options for extended storage.” Janin et al (2014).

Reference:

Jain, J.G., Sutherland, C., Nicolau, D.P. and Kuti, J.L. (2014) Stability of ertapenem 100 mg/mL in polypropylene syringes stored at 25, 4, and  $-20^{\circ}\text{C}$ . American Journal of Health-System Pharmacy. 71(17), p.1480-1484.

Authors review the stability of ertapenem solution in syringes [@ivteam](http://ctt.ec/4fA6E+) #ivteam

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Abstract:

**Purpose:** The stability of ertapenem solution in syringes at room, refrigerator, and freezer temperatures was determined to establish options for extended storage.

**Methods:** Six replicate solutions of ertapenem (100 mg/mL) in 0.9% sodium chloride injection were prepared in 20-mL polypropylene syringes and stored at 25, 4, or  $-20^{\circ}\text{C}$ . Syringe samples were collected immediately after preparation and at preselected time points and assayed by a validated high-performance liquid chromatography (HPLC) method. The ertapenem solution was considered stable if at least 90% of the mean initial concentration remained at the time of HPLC analysis.

**Results:** The mean  $\pm$  S.D. baseline ertapenem concentration across all stability studies was  $109.9 \pm 9.2$  mg/mL. One hour after preparation, the mean  $\pm$  S.D. ertapenem concentration of samples kept at room temperature was  $87.8 \pm 4.6\%$  of the initial concentration. After 24 and 48 hours of refrigeration, mean  $\pm$  S.D. drug concentrations had declined to  $93.6 \pm 5.9\%$  and  $86.2 \pm 4.3\%$  of the respective baseline concentrations. Frozen syringes required 1 hour to thaw at room temperature; after 14 and 28 days of frozen storage, the mean  $\pm$  S.D. ertapenem concentrations of these samples 4 hours after thawing were  $93.4 \pm 3.5\%$  and  $86.4 \pm 2.6\%$  of the respective baseline values.

**Conclusion:** Ertapenem 100 mg/mL prepared in 20-mL polypropylene syringes was stable at room temperature for approximately 30 minutes. Room-temperature stability was extended to 4 hours after 24 hours of refrigeration. After being frozen for 14 or 28 days, ertapenem was stable for 3–5 hours after removal from the freezer.



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