

EDTA Anticoagulants

Standards in hematology

- The CLSI Standard (formerly NCCLS, US Standard) for venous blood collection published in December 2010 no longer defines K_2 EDTA and K_3 EDTA as separate EDTA options [1].
- In 2004, the European Standard EN 14820 defined the EDTA options K_2 EDTA, K_3 EDTA, and Na_2 EDTA as possible additives for venous blood collection from humans. These variants were also stated in the preceding standard DIN ISO 6710, and the range of concentration was determined to be 1.2 mg to 2 mg/ml blood [2, 3].
- In order to obtain the recommended anticoagulant concentration in a tube, correct filling and mixing are basic prerequisites [1].
- Due to its high osmolarity, EDTA has a basic effect on the blood cells. The analysis results measured from K_2 EDTA and K_3 EDTA tubes show equivalence and no significant deviations [4].
- K_2 EDTA and K_3 EDTA were compared in immunohematological analyses and qualified as equivalent additives for use in blood banks [5].
- The results of blood counts with leukocyte differentiation compared by Beckman Coulter revealed equivalence for both K_2 EDTA and K_3 EDTA tubes of identical concentration regarding precision, correctness, stability and diagnostic significance [4, 6, 7].



Literature:

1. CLSI Dubrowny et al *Tubes and Additives for Venous Blood Specimen Collection; Approved Standard – Sixth Edition*: 30 (26) H1-A6, 2010
2. Europäische Norm EN 14820 *Gefäße zur einmaligen Verwendung für die venöse Blutentnahme beim Menschen*, 2004
3. Deutsche Norm DIN ISO 6710 *Gefäße zur einmaligen Verwendung für die venöse Blutentnahme*, 1996
4. Philips et al *Performance of K_2 EDTA- vs K_3 EDTA-collected blood specimens on various hematology analyzers* Lab. Hematol. 4: 17-20, 1998
5. Leatham et al *Equivalence of spray-dried K_2 EDTA, spray-dried K_3 EDTA, and liquid K_3 EDTA anticoagulated blood samples for routine blood center or transfusion service testing* Immunohematology 19(4): 117-121, 2003
6. Brunson et al *Comparing hematology anticoagulants: K_2 EDTA and K_3 EDTA* Lab Hematol 1:112-119, 1995
7. Goossens et al *K_2 - or K_3 EDTA: the anticoagulant of choice in routine haematology* Clin Lab Hemat 13: 291-295, 1991

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