METHOD VALIDATION OF THE GAMMAVISION® TCC CALIBRATION WIZARD

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ABSTRACT

The High Purity Germanium (HPGe) Gamma Emitters in Urine analytical method is a component of the CDC Urine Radio-Bioassay Screen, providing rapid identification and quantification of multiple gamma-emitting radionuclides in patient samples collected in the aftermath of a nuclear or radiological emergency. These assessments provide critical data used to determine the health risk to the individual and to guide medical management decisions. HPGe calibration is a fundamental aspect of the analytical method. The True Coincidence Correction TCC calibration method built into the ORTEC GammaVision® software is a generalized approach to efficiency calibration, allowing for accurate activity measurements over a wide range of radionuclides. The method has significant drawbacks: the built-in calibration is not tunable, HPGe well detector's efficiency suffers severely from coincidence summing, and special attention needs to be made to summing from X-rays. We make recommendations for how to best apply the TCC method based on tests of its accuracy, repeatability, and robustness. We will present results from the validation of the HPGe analytical method to demonstrate the TCC method's impact on the validation parameters.

Disclaimer

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