

Commutable Certified Reference Materials for Next Generation Accuracy-based EQA Schemes

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Although reference method target values are necessary to estimate methods trueness, another prerequisite is needed: quality control materials must be commutable, ie. mimic the behavior of patient samples (-). In contrary to authentic clinical specimens (that are commutable by definition), External Quality Assessment materials can be subject to matrix effects that are due to the different treatments applied to the materials during their preparation (eg. lyophilization, freezing, addition of preservatives and/or cryoprotectants, pooling, spiking with exogenous chemicals or purified compounds to increase concentration...). Non commutability of EQA materials may skew trueness assessment because the difference between the reference method target value and the measured value will actually correspond to the sum of the analytical bias (that is due to the method itself) and the bias due to matrix effects (that is due to sample non-commutability). Given that non commutability can affect some methods more than others (a material could be commutable for one method but not for another one), non-commutability of EQA materials can also compromise the ability to evaluate the agreement between the different methods. In this presentation, the concept of commutability will be explained and the latest IFCC recommendations will be presented with the objective to highlight the potential role of commutable certified reference materials in next generation accuracy-based EQA schemes.