

IFCC Committee on Calibrators in Clinical Enzymology (C-CCE)

Status report on the activities in 2000

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IFCC REFERENCE SYSTEMS FOR CK, LD, GGT, ALT AND AST

Reference measurement procedures based on the former IFCC 30°C methods were developed and optimised for a measurement temperature of 37°C. The procedures were applied to certify BCR reference materials for CK, LD, GGT and ALT.

Members of the C-CCE agreed to check the commutability of two different materials offered from diagnostic kit manufacturers as candidate AST reference materials. One of these materials should be selected during the C-CCE meeting at the forthcoming IFCC General Conference in Dubrovnik (March 2001) and recommended to the Institute for Reference Materials and Methods (IRMM) for certification by the network of reference laboratories.

The new 37°C IFCC reference measurement procedures are now available in the form of standard operating procedures (SOP) with precise description of all experimental details including the metrological control of gravimetric, volumetric and photometric equipment. The procedures will be issued as IFCC publications; the drafts of the publications will be discussed at the C-CCE meeting in March 2001 before being processed through the IFCC channels to the national member societies for mail ballot.

IFCC REFERENCE SYSTEM FOR AMYLASE

A 30°C IFCC reference procedure was optimised for a measurement temperature of 37°C in Dr. Schumann's laboratory in Hannover, Germany. Prior to a certification campaign for an IRMM reference material, a training exercise including nine reference laboratories was conducted in Spring 2000 using various commercial control materials. As the results of this training exercise looked very promising, the actual certification campaign was started late in 2000. It can be assumed from the first inspection of the data obtained from the laboratories that the certification experiment has been successful. A meeting of IRMM representatives with the group of the enzyme network reference laboratories will be held to decide on the final certified values as well as its uncertainty. The SOP, which was used for the certification measurement campaign, will be issued after it has passed a mail ballot of the IFCC member societies.

FUTURE PLANS

The C-CCE will continue to work on Reference Systems for Alkaline Phosphatase (ALP) and Lipase. For the design of the reference procedure for ALP in particular, the selection of the most appropriate buffer system will be critical. According to some preliminary experimental evidence it seems necessary to perform further experiments in several laboratories of the network in order to establish a valid and generally accepted ALP reference procedure. This will be used to select a candidate preparation as reference material with respect to its commutability and to certify this preparation by the laboratory network in co-operation with IRMM.

After the 1998 IFCC General Conference in Seville, the concept for the standardisation of measurements of the catalytic concentration of enzyme was changed from the simple calibration approach to the implementation of complete Reference Systems consisting of reference measurement procedures, reference materials and networks of

reference laboratories (1). The C-CCE will discuss whether its title should be modified to "Reference Systems for the Measurement of Catalytic Concentrations of Enzymes".

A further problem may arise from the fact that the laboratories of the network up to now have been invited to perform measurements only on the occasion of certification campaigns. There is a considerable risk of loss of experience and skill over time. It has to be discussed whether an infrastructure can be established by which regular ring trials of the laboratories can be performed. The results of such ring trials could form a basis for approval of the individual laboratories to become and remain members of the enzyme reference laboratory network.

REFERENCES

1. Panteghini M, Ceriotti F. Establishing a reference system in clinical enzymology. *Biochim Clin* 2000;24:499-508.