



Calibration of protein measurements using purified proteins

CCQM/ EMRP Workshop

BIPM, Paris 24th April 2015

Introduction

Calibration against pure materials certified or verified by a technically competent body is a widely applied strategy for calibration in measurements for the molecular sciences. For proteins, this strategy presents particular challenges related to the complexity of protein structure. This workshop will consider the advantages, limitations and technical requirements associated with the use of purified proteins for calibration.

Workshop Objectives

The workshop will identify the steps necessary to develop and use pure protein reference materials as a route to establishing traceability to the SI for protein measurement

Scope

Topics covered will include:

- Fundamental principles of the use of purified proteins as reference materials for traceability to the SI
- Impact of molecular and biological form on quantitation
- The importance of commutability in the calibration chain
- Steps necessary to prepare purified protein materials
- Opportunities for use of purified protein RMs in practical biological measurement
- “State of the art” measurement techniques for complex protein characterisation & purity assessment



Draft Agenda

Time	Presenter	Topic
Introduction & Current Practice		
9:00-9:20	Steve Elison LGC	Introduction: Pure materials in calibration
9:20-9:40	Ralf Josephs BIPM	Current purity assessment mass balance approaches as applied to angiotensin, insulin & c-peptide
RM producer perspective – current approach & requirements		
9.40-10:00	Heinz Schimmel / Ingrid Zegers IRMM	Current approaches IRMM: Discussion of protein purity in context of measurand and requirements for clinical RM production
10-10.20	Fouad Atouf, Director, Biologics & Biotechnology, USP–NF	Current USP approaches for Biological Reference materials
10:20-10:40	<u>Paul Matejschuk</u> Head, Standardisation Science Technology, NIBSC	NIBSC approaches to protein biologics characterisation and RM production
10.40-11.00	<i>Coffee</i>	
End user perspective		
11:00-11:30	IFCC / Paul Collinson EFCLM tbc	Stakeholder needs I Requirements from the Clinical perspective
11.30-12.00	Mike Davis (CPI NBMC) tbc	Stakeholder needs II Requirements from the BIOPHARMA perspective
12:00-12.30	Panel Discussion	
12.30 -1.30	<i>Lunch</i>	
Protein Characterisation - Measurement “state of the art”		
1.30-2.10	<u>Mark Howard</u> Reader in biological NMR spectroscopy University of Kent	Technical Talk I - NMR characterisation State of the art NMR for higher molecular weight protein characterisation
2.10-2.50	<u>Alison Ashcroft</u> Prof Biomolecular Mass Spectrometry University of Leeds	Technical Talk II – Protein Aggregation & Folding State of the art application of new mass spectrometry methodologies to the analysis of the structure and functional behaviour of biomolecules and biomolecular complexes.
2.50-3.30	Pauline Rudd (tbc) NIBRT	Technical Talk III PTMs
3.30-4.00	Closing discussion	End with a brief summary/ panel discussion (& commutability discussion?)
16.00	<i>Close</i>	