

IRMM/IFCC Project Overview 2014

Henrik Zetterberg, MD, PhD
Professor of Neurochemistry
Clinical Neurochemistry Laboratory
Sahlgrenska University Hospital
Gothenburg/Mölndal, Sweden

henrik.zetterberg@gu.se

Different players in the AD biomarker standardization field:

Reference methods

GBSC
IFCC working group

Use reference methods to set levels in **reference materials**

- Pilot batches by GBSC with partners including the IFCC working group
- Large-scale production by IRMM

Supply reference material to assay producers by IRMM (non-profit)

Certification of methods and materials by IFCC

Collaboration with other research consortia, including BIOMARKAPD

The Alzheimer's Association QC program

Monitor and evaluate the progress of the global standardization efforts

alzheimer's  association®
the compassion to care, the leadership to conquer


Institute for Reference
Materials and Measurements


IFCC
International Federation
of Clinical Chemistry
and Laboratory Medicine

What is IRMM?

One of the seven institutes of the Joint Research Centre (JRC), a Directorate-General of the European Commission (EC)

One of the world's leading reference material producers, as well as a provider of reference measurement data (non-profit)

What is IRMM?

Operates four European Union Reference Laboratories (around 300 employees). Its management system is certified according to ISO 9001, ISO 14001 and OHSAS 18001 and its units hold several accreditations

Collaborates with several other metrology institutes, including NIST (National Institute of Standards and Technology)

IRMM – role in AD biomarker standardization project?

They will:

- (i) assist in the development of reference materials for CSF A β 42, T-tau and P-tau
- (ii) produce and provide the final materials
- (iii) assist in the development of reference methods for the analytes.

IRMM – role in AD biomarker standardization project?

Project manager at IRMM:

Dr Ingrid Zegers, who is also a part of the IFCC working group on CSF biomarkers



What is IFCC?

The International Federation of Clinical Chemistry and Laboratory Medicine (IFCC) is a worldwide, non-political organization for clinical chemistry and laboratory medicine.

What is IFCC?

Goals:

- (i) global standard setting in clinical laboratory procedures in collaboration with other international organizations,
- (ii) supporting its members through scientific and educational endeavor, and
- (iii) providing a series of congresses, conferences and focused meetings

August, 2011: Project proposal on the development of reference materials and methods for AD biomarkers submitted to IFCC by the Swedish Society for Clinical Chemistry

October, 2011: Project approved by IFCC (the field is mature!)

May, 2012: Working group formed by the Scientific Division

May, 2013: First WG-CSF meeting in Milan

June, 2014: Second WG-CSF meeting in Istanbul

WG-CSF

K Blennow	Chair	Sweden
R Bateman	Member	US
R Jenkins	Member	US
M Korecka	Member	US
P Lewczuk	Member	Germany
LM Shaw	Member	US
H Vanderstichele	Member	Belgium
I Zegers	Member	Belgium
H Zetterberg	Member	Sweden

Objectives of the IFCC WG-CSF

- (i) to develop an international reference material for cerebrospinal fluid (CSF)
- (ii) to establish reference methods for the key measurands for assignment of values to the reference material

The work will be evaluated on a yearly basis by the Scientific Division at IFCC

Current status and timeline

A candidate mass spectrometry-based reference method for A β 42 has been submitted to JCTLM by the working group (feedback is pending)

In the meantime, work during 2014 will be focused on creating candidate reference methods for total- and phospho-tau and continue the work on the human CSF-based reference material that is under evaluation by IRMM

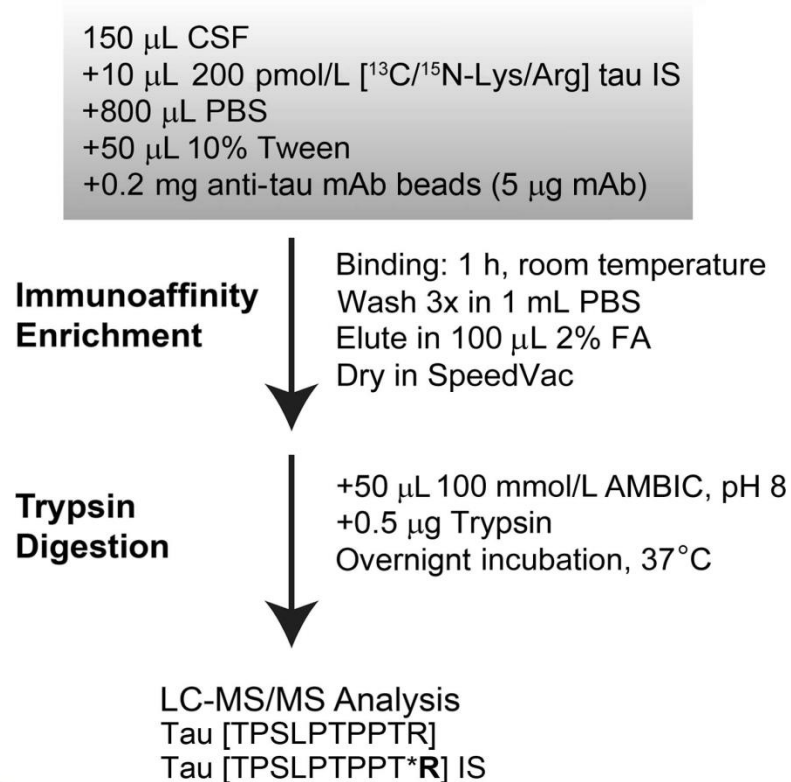
Goal: have the reference method for A β 42 officially approved before end of 2014

Is an MS-based reference method for total-tau feasible?

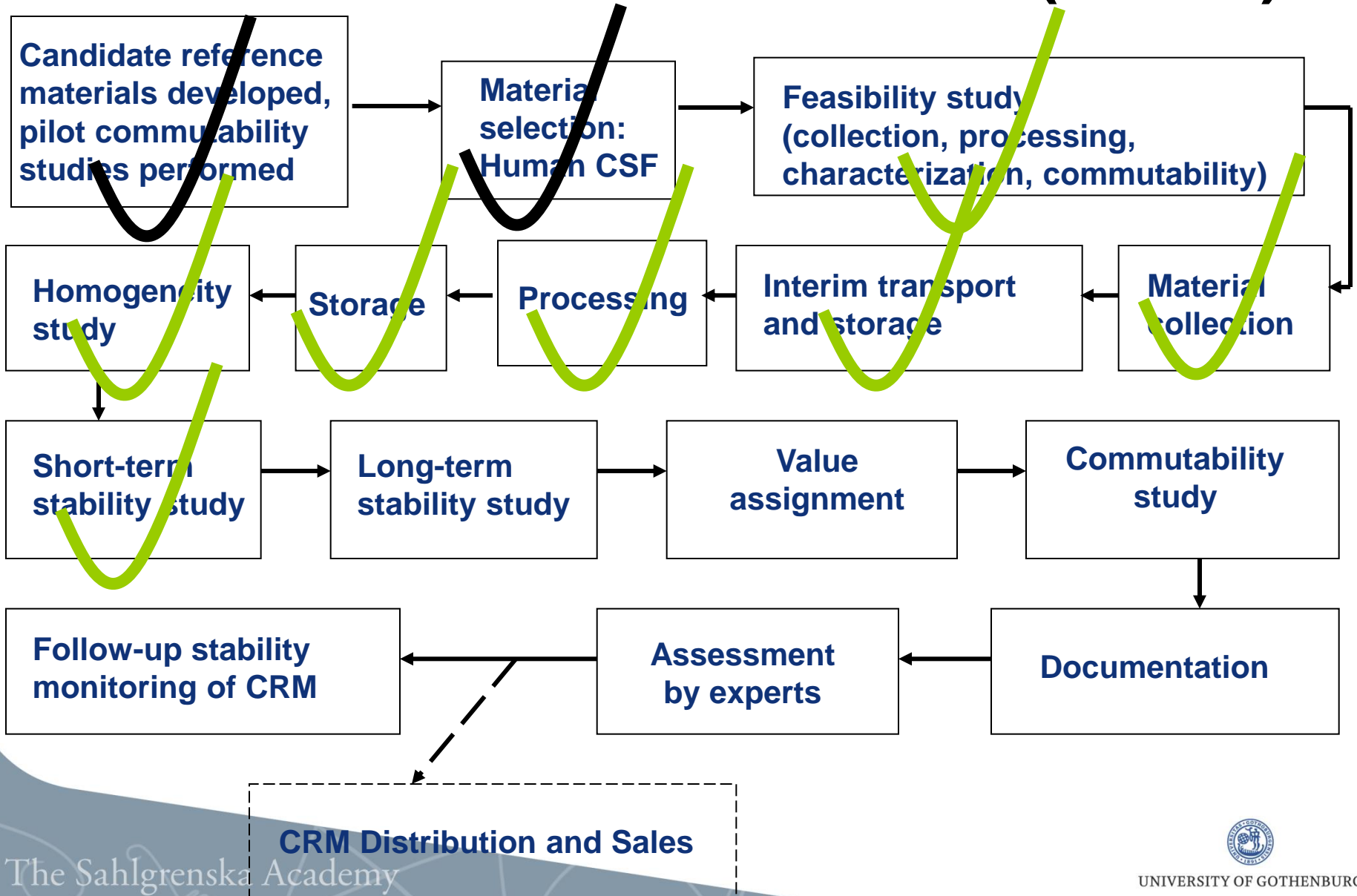
Published February 24, 2014 as doi:10.1373/clinchem.2013.216515

Quantification of Tau in Cerebrospinal Fluid by Immunoaffinity Enrichment and Tandem Mass Spectrometry

Thomas McAvoy,^{1*} Michael E. Lassman,¹ Daniel S. Spellman,² Zhenlian Ke,² Bonnie J. Howell,² Oitak Wong,¹ Lan Zhu,¹ Michael Tanen,¹ Arie Struyk,³ and Omar F Laterza¹



Outline of project – certified reference materials (CRMs)



Acknowledgments

alzheimer's  association®

the compassion to care, the leadership to conquer

