EUROPEAN COMMISSION
JOINT RESEARCH CENTRE

Institute for Reference Materials and Measurements

IRMM IS LOOKING FOR COLLABORATORS FOR ITS CRM ACTIVITIES

No laboratory in the world is able to perform all measurements needed for the wide range of reference materials of IRMM. In addition, input from the experts in the field is an invaluable source of information for adapting the materials even better to the customers' needs. IRMM is therefore looking for collaborators for stability monitoring and for certification projects. The registered collaborators can be asked to submit an offer for a particular study.

WHAT KIND OF MEASUREMENTS?

Potential collaborators are welcome for three types of studies, namely characterisation studies, homogeneity and stability studies, and feasibility studies. For each of these types of studies, the following measurement fields are currently defined:

Measurement field	Description (examples)
Major elements	Element content in food and environmental samples, metals and ceramics in the range of 1 g/kg and above
Trace elements	Element content in food and environmental samples, metals and ceramics in the range < 1 g/kg (typically mg/kg)
Extractable elements	Extractable element content in environmental samples
Metal species	Metal species (Sn, As, Hg, Pb - species) in food and environmental samples
Food proximates	Food proximates and conventional properties (e.g. Kjeldahl-N, dietary fibre, triglyceride pattern, Chopin alveograph) in solids and solutions.
Food toxins	Food toxins (e.g. aflatoxin M_1, DON, ochratoxin A) in matrix and pure solutions
Vitamins	Vitamin content in food samples
Xenobiotics in food	PAHs and pesticides in food samples
Xenobiotics in environment	PAHs and pesticides in environmental samples
Dioxins, PCBs, PBBs and PBDEs	PCBs, PBBs, dioxins and PBDEs in food, environmental and industrial samples
Veterinary drugs	Veterinary drug residues in food samples

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Measurement field	Description (examples)
GMOs	Identification and quantification of DNA and/or proteins extracted from matrix materials like maize and soybean powders, quantification of DNA in pure solutions.
Microorganisms	Number of colony forming units of microbes (*B. cereus, S. typhimurium* etc.) in food samples
Fuel parameters	Calorific value, S content, flashpoint, filter plugging point in solid and liquid fuels (e.g. coal, diesel)
Mechanical properties	Mechanical properties (e.g. impact toughness, scratch resistance, creep rate) in a wide variety of samples (e.g. Charpy test pieces, scratch test plates)
Morphological properties	Particle size, pore size, lattice spacing, etc. of powders and granules
Thermal properties	Thermal conductivity of e.g. glass and glass fibre boards
Protein characterisation	Characterisation of protein by e.g. NMR, immunochemistry, MS. The techniques used should be specified in the application.
Protein quantification by reference method	Measurement of proteins in matrix materials (serum, urine, blood) or in pure preparations by e.g. MS, amino acid analysis, immunochemistry, capillary electrophoresis. The techniques used should be specified in the application.
DNA characterisation	E.g. by sequencing, genotyping, PCR
DNA quantification	E.g. by real-time PCR
Enzyme activity	Measurement of catalytic activity. Whether routine and/or reference methods are used should be specified.
Small organic compounds in clinical matrices	Health-related organic compounds in matrix materials and in pure preparations (e.g. hormones, metabolites)
Quantitative analysis applying routine *in vitro* assays	Health-related parameters as determined by routine *in vitro* assays (homogeneity and stability testing only)
Purity of small organic molecules	Characterisation of the purity of small organic molecules by e.g. DSC, TGA, NMR, IR or chromatographic techniques

For a better idea of potential analyte/matrix combinations, please see our catalogue: http://www.irmm.jrc.be/html/reference_materials_catalogue/index.htm

WHAT REQUIREMENTS HAVE TO BE FULFILLED?

A collaborator needs to fullfill certain requirements depending on the study. Requirements for the three types of study are different. Feasibility studies are conducted to get information on how a project could be executed. As this activity is of exploratory nature, fully validated methods do not always exist. For homogeneity and stability tests, relative measurements are often sufficient, thus allowing use of potentially biased methods. Characterisation studies require highest accuracy and method validation, as the

final certified values essentially depend on the results. The requirements that have to be fulfilled are given in the following table.

Note: The term "accreditation" refers to any third-party assessment confirming technical competence. This applies of course to ISO 17025, but also e.g. attestations for GMP compliance. ISO 9001 certification does not confirm technical competence, but is sufficient evidence for fulfilling the quality management requirements.

Requirement	**Needed for the study**			**Example**
	Charact. study	**Homogeneity / stability**	**Feasibility study**	
Technical competence				
Documented methods	y	y	y	Accreditation for the task, self-declaration
Validated methods	y	y		Accreditation, self-declaration
Proficiency	y	y		Accreditation for the measurement, participation in proficiency testing schemes, scientific publications, participation in certification studies/stability testing before, etc.
Quality system				
Document control system	not strictly required, but highly desirable			Accreditation (general), certification, self-declaration
Competence of staff	y	y	y	Accreditation, certification, self-declaration

Regarding method validation:

- For characterisation studies: Methods must be fully validated in a way that allows drawing up an uncertainty budget (trueness, repeatability, reproducibility, selectivity, working range, robustness). The need for full validation stems from the need to obtain a realistic estimation of the measurement uncertainty. No "classical" method validation is needed if full uncertainty budgets can be supplied.

- For homogeneity and stability studies: Absolute method trueness is not a prerequisite, selectivity must be determined and an estimation of method repeatability must be available.

HOW TO APPLY?

To apply for one or more measurement fields, please send the following information:

- A cover letter stating name, address of the organisation, contact details of the contact person and the measurement field(s), which is (are) covered by the application.

- Evidence for fulfillment of the above mentioned criteria.

Accredited organisations: the accreditation certificate together with the scope of accreditation (please highlight the parts that refer to your application). Further evidence (e.g. results in PT schemes, participation in certification studies etc.) of proficiency should be added.
Non-accredited organisations: Evidence of technical competence (e.g. results in PT schemes, participation in certification studies etc.) together with the supplier QA questionnaire must be provided.

Note: Answering "No" on one or more of these questions of the supplier QA questionnaire does not automatically result in disqualification. However, depending on the type of study, more data may have to be provided together with the offer.

The information should be sent to:

European Commission
Joint Research Centre
Institute for Reference Materials and Measurements
Reference Materials Unit
Secretariat
Retieseweg 111
B-2440 Geel, Belgium

Tel.:+32 (0)14 571 889
Fax: +32 (0)14 571 548

WHAT HAPPENS AFTER APPLICATION?

IRMM evaluates your application and aims to give feedback within one month. Qualified laboratories will be invited to submit an offer for particular studies when the need arises. This invitation will be sent to laboratories in compliance within the financial regulations of the European Commission. As the measurement fields in the table above are relatively general, detailed information regarding the method used and its performance (repeatability, uncertainty etc.) may be asked together with the offer.

Validation of laboratories does not expire automatically, but can be revoked due to insufficient performance. Naturally, laboratories can revoke their listing at any time.

Further information:
Dr. Robert Koeber
European Commission
Joint Research Centre
Institute for Reference Materials and Measurements
Reference Materials Unit
Retieseweg 111
B-2440 Geel, Belgium

Tel.: +32 (0)14 571 952
Fax: +32 (0)14 71 548
E-mail: Robert.koeber@ec.europa.eu