

Deliverable D7.5.1

Project Title:	Developing an efficient e-infrastructure, standards and data-flow for metabolomics and its interface to biomedical and life science e-infrastructures in Europe and world-wide	
Project Acronym:	COSMOS	
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WP No.	WP7	
Lead Beneficiary:	13:UBHAM	
WP Title	Outreach and Training	
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Actual delivery date:	1 October 2014	
WP leader:	Ulrich Günther	UBHam
Contributing partner(s):	EBML-EBI, UB2, UB, UBHAM, IPB, CIRMMP	

Authors: Contributions from all partners



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1 Executive summary

The aim of this deliverable is to report training workshops: Reports about four training workshops at different geographic locations.

2 Project objectives

With this deliverable, the project has reached the following objectives:

No.	Objective	Yes	No
5	Provide training workshops on Metabolomics data deposition, dissemination and access through the general COSMOS outreach	X	

3 Detailed report on the deliverable

3.1 Background and abstract

This deliverables' main scope is to hold workshops, training and hands on practicals with potential users of the "Metabolomics Data Deposition and Dissemination" systems as well as "data standards and exchange formats" that were developed within the COSMOS consortium.

3.2 Description of Work

Workshops by EMBL-EBI

- Cambridge University, Department of Genetics; Bioinformatics: Introduction to Metabolomics, metabolomics standard and databases.



- Graduate School of Life Sciences, Mon 20 Jan 2014
- COSMOS/Metabolights meeting, Imperial College London, 22nd January 2014 (organised by Imperial and EMBL-EBI) hang on practical and data submission
- NIH - The Common Funds Metabolomics Infrastructure workshop. Presentation and hands-on, COSMOS & MetaboLights. San Diego, USA, 5th-8th February 2014
- RIKEN-MPI Joint Workshop On Forefront of Metabolomics and Future Prospect RIKEN Japan 26 Feb 1 March .Presenting MetaboLights: Metabolomics data repository and the role of COSMOS" - COordination Of Standards In MetabOlomicS.
- EMBO Practical Course on Metabolomics Bioinformatics for Life Scientists 2014. Metabolomics, COSMOS & MetaboLights. EMBL-EBI, UK, 17th-21st March 2014
- A workshop and hand on MetaboLights and COSMOS and Tokyo University 1 March presentation to participant and discussions on data standards.
- Workshop: Hands on data submission to MetaboLights using ISATools. And Maximizing '-Omics' interoperability by promoting metabolomics open standards data exchange formats: The biologist view. Wednesday 21st May 2 hours during the 8th Meeting of the French Metabolomics and Fluxomics Network.
- Joint workshop with Biomed Central Gigascience Team at BGI Hong Kong, and the ISA Team at the University of Oxford e-Research Centre who organized a hackathon in Hong Kong, June 2014
- Workshop was organized by COSMOS and the Data Standards Task Group of the Metabolomics Society during the annual Metabolomics Society conference in Tsuruoka June 2014
- EAWAG data management workshop, COSMOS & MetaboLights. Switzerland, 25th June 2014
- TMIC - Metabolomics Data Standards and Data Processing Workshop, COSMOS & MetaboLights. University of Edmonton, Canada, 15th-18th July 2014
- Summer Schools: Data Acquisition and Analysis in Metabolomics (Pula, Cagliari), Italy, 15-20 September 2014

Workshops by UB and UBHam

- Computational Lab-based course. Szeged, Hungary. 21-22 October 2013, workshop attended by Dr. Marta Cascante and Dr. Pedro de Atauri (UB).
- Metabolic flux and Cancer Meeting. Budapest, Hungary. 23-25 October 2013, Meeting attended by Dr. Marta Cascante (UB), Dr Ulrich Guenther (UBHam, organiser), and Dr. Pedro de Atauri (UB). Marta Cascante gave an oral presentation: Estimation of metabolic fluxes by tracer based metabolomics: application in targeting



metabolic reprogramming of cancer cells. Marta Cascante. (25th October 2013).

Workshops by CIRMMMP

- October, 16th, 2014 User meeting of the IR-RMN THC, Grenoble. Invited speaker, Claudio Luchinat
- September, 1th, 2014 FEBS EMBO 2014 Conference. Presentation given by Claudio Luchinat
- July, 6th, 2014 Italian congress of food chemistry, Florence. Presentation given by Claudio Luchinat
- May, 27th, 2014 GIDRM Workshop on food chemistry, Rome. Presentation given by Claudio Luchinat
- May, 20th, 2014 XII International Conference on the Applications of Magnetic Resonance in Food Science. Presentation given by Leonardo Tenori
- May, 12th, 2014 GIDRM Workshop on quantitative NMR, Rome. Presentation given by Leonardo Tenori
- January, 7th, 2014 Applications of metabolomics: from individual fingerprint to milk analysis. Coimbra (Portugal) - Seminar given at University of Coimbra by Claudio Luchinat

Workshops by IBP

- NORMAN workshop at Eawag, Dübendorf, Switzerland (9/2014)
- HUPO PSI 2014, Reinhardshausen, Germany,
- mzTab Tübingen, Germany, 2014, 6.3.2014
- nmrML Hackathon at TIMC, Edmonton, Canada
- IPB data analysis workshop, IPB Halle, Germany, 17.07.2014
- IPK Metabolomics task force, IPK Gatersleben, Germany, 6.5.2014

Workshops by UB2

- Hands on data submission to MetaboLights using ISATools. And Maximizing '-Omics' interoperability by promoting metabolomics open standards data exchange formats: The biologist view. Wednesday 21st May 2 hours during the 8th Meeting of the French Metabolomics and Fluxomics Network.
https://colloque6.inra.fr/8_js_rfmf_lyon_2014/Ateliers/MetaboLights-CosMos



3.3 Next steps

1. Providing similar video clips or tutorials on usage of other resources with COSMOS partners
2. Continue planning future workshops

4 Publications

N/A

5 Delivery and schedule

The delivery is delayed: Yes No

6 Adjustments made

No adjustments done

7 Efforts for this deliverable

Institute	Person-months (PM)		Period
	actual	estimated	
1:EMBL-EBI	0.3		24
UB	0.2		
All partners	1 In kind		



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Total	0.5	1	
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Appendices of websites

1. <http://cosmos-fp7.eu>
2. <http://cosmos-fp7.eu/nmrML/>
3. www.nmrml.org
4. <https://github.com/nmrML/nmrML/tree/master/docs>
5. <http://sourceforge.net/projects/cosmos-fp7/>
6. <http://www.ebi.ac.uk/training/online/course/introduction-metabolomics>
7. <http://www.ebi.ac.uk/training/online/course/metabolights-quick-tour-0>
8. <https://www.youtube.com/user/cosmosfp7>
9. <https://www.youtube.com/user/isatools>
10. <http://nmrml.org/tutorials/>



Background information

This deliverable relates to WP7; background information on this WP as originally indicated in the description of work (DoW) is included below.

WP7 Title: Outreach and Training
 Lead: Ulrich Günther, UBHam
 Participants: Ulrich Günther

This work package will provide a close link between the COSMOS consortium and the wider metabolomics and the biomedical community. We will raise community awareness for the services provided by the COSMOS consortium, from data submission support to different views on metabolomics data, but also for the increasingly stringent requirements for data availability as part of the metabolomics publication process. Through the existing framework of the Metabolomics Society, we will ensure broad community input into the services developed by the COSMOS consortium and the standards for Metabolomics data representation developed in this proposal. This deliverable relates to WP7; background information on this WP as originally indicated in the description of work (DoW) is included below.

Work package number	WP7	Start date or starting event:			Month1			
Work package title	Outreach and Training							
Activity Type	COORD							
Participant number	1: EMBL-EBI	2: LU/NC	7: UB	13UBHam				
Person-months per participant	8	2	4	8				

Objectives

1. Provide link between the COSMOS consortium and the wider metabolomics and the biomedical community
2. Raise community awareness for the services provided by the COSMOS consortium
3. Collect broad community input into services developed by the COSMOS consortium

Description of work and role of participants

We will initially employ the usual channels for the disseminations of COSMOS



standards, including scientific publications, and workshops and presentations at metabolomics conferences to reach the wider metabolomics community.

The project will plan activities adequately resourced devoted to dissemination for specialised constituencies and general public, in particular for awareness and educational purposes. The dissemination plan deliverable will consider adequate messages about the objectives of the project and its societal and economic impact. The tools we will use will include web-based communication, press releases, brochures, booklets, multimedia material, etc. The 'dissemination material' will be regularly updated to provide the latest version of the project status and objectives. Electronic and/or paper versions of this 'dissemination material' will be made available to the Project Officer beforehand for consultation and upon its final release. In all material produced in all dissemination activities we will properly acknowledge the source of funding by prominently placing the FP7 logo and the European Commission logo.

We will create and maintain the consortium website in an open source content management system. The website will have an EU domain such as www.cosmos-fp7.eu. This website will have a specific COSMOS branding with a professionally designed COSMOS logo to reflect the collaborative and international nature of the consortium. The COSMOS website will allow for content management by the partners, additional component (intranet, calendar, web site search), advanced analytics, functional testing, and communication via mailing lists. COSMOS will also build close links between the COSMOS consortium and the European and International metabolomics community, and the wider biomedical community. For this COSMOS will build on existing links with other EU and International initiatives (e.g. EU projects including the ESFRI infrastructures ELIXIR, BioMedBridges, EU Openscreen, and the IRSES WordWide NMR to build links international stakeholders in China, specifically the Wuhan metabolomics center, India, and South America). Moreover, COSMOS will build links metabolomics groups in Canada (HMDB, Wishart) and the US (BMRB; see letters of support), both running major metabolomics WEB portals. COSMOS will also build an intensive dialog between mass spectrometry and NMR instrument vendors, search engine providers, experimentalists, data resources, and journal offices. This will require travel funds for all COSMOS stakeholders. Stakeholders are key members and opinion makers of the wider metabolomics community worldwide, in particular the USA, Canada and Japan. These will be invited to workshops and the annual stakeholder meetings where COSMOS standards are disseminated. COSMOS will react dynamically to requests from participants and outside advisors. The stakeholder meetings will preferably be held attached to the annual Metabolomics Society meeting or the MetaboMeeting, where the majority of the metabolomics community is present.

Two ELearning WEB tutorials on "Metabolomics Data Deposition" through COSMOS will be made available through partner websites, links from conferences, and announcements on the project web site. The tutorials will be step-by-step 20-30 minutes guides to "Metabolomics Data Deposition and Dissemination through COSMOS". These tutorials need to be carefully scripted, rehearsed and produced in the Media Production room of the Wellcome Trust Genome Campus. We expect that COSMOS standards will be adapted quickly considering this wide-spread array of dissemination channels involved.

Task 1: Development of outreach material (Website, flyer, brochures, etc)

Task 2: Publication of results in scientific journals

Task 3: Presentation of work of the consortium at conferences, in particular the



MetaboMeeting and the annual meeting of Metabolomics Society.

Task 4: Development and dissemination of a web tutorial about the workflows and standards developed in this consortium.

Task 5: Provide training workshops on Metabolomics data deposition, dissemination and access through the general EBI outreach department. (EMBL-EBI)

Deliverables

No.	Name	Due month
D7.1.1	Outreach activity plan (including publications)	2
D7.1.2	Updated Outreach activity plan (including publications)	12
D7.1.3	Updated Outreach activity plan (including publications)	24
D7.2	Report on the COSMOS consortium website	2
D7.3.1	Report on annual stakeholder meetings	12
D7.3.2	Report on annual stakeholder meetings	24
D7.4.1	Web-based tutorial	18
D7.4.2	Updated web-based tutorial	24
D7.5.1	Report about training workshops	24
D7.5.2	Report about training workshops	36