

COST ACTION FA0804

Molecular farming: plants as a production platform for high value proteins

Minutes of the 6th Management Committee Meeting

**Hotel Monasterium, Ghent, Belgium
16th September, 2011 at 14:00 pm**

1. Welcome to participants

The Chair welcomed the participants and opened the meeting at 14.00.

2. Adoption of the agenda

There were no adaptation to the agenda but additional matters could be dealt if needed in the miscellaneous section.

3. Presentation of the delegations

Twenty four MC members and Anja van der Snickt as a representative from the COST-Office were present in the meeting (see Annex 1).

4. Approval of the minutes of the previous MC meeting

The minutes of the previous MC meeting (held in Vico Equense on 8th of October, 2010) were approved.

5. Greetings from the COST-office

Administrative Officer Anja van der Snickt presented the actual news (see slides as Annex 2) – Briefly:

- Three new Actions in the FA Domain have been approved
- The next DC FA APC meeting will be held in Glasgow 27th-29th June 2012
- Up to 6 months prolongation can be applied for the Action but the budget stays as fixed
- All the STSM's need to be finalized before the end of the Action
- For the final conference maximum of 60 k€ can be allocated and the conference must be arranged before the end of February 2013 if no prolongation is applied
- Final publication is paid from the central COST budget (up to 10 k€) and it must be applied 6 months in advance. The final publication should be e.g. a show case of what the Action has achieved, a special issue of a journal, review or a book. Final conference will have an External Evaluation Panel (three externals and they can also come outside of Europe) which will be appointed by COST.
- The draft of the final report needs to be delivered to the evaluation panel one month prior to the final conference

Chair opened the discussion of the prolongation (must be reasoned as some activities are still on-going e.g. finalizing publications). MC decided that the prolongation will be requested without objections. Chair will send a letter applying the prolongation of six months to Scientific Officer Ioanna Stavridou. If approved the end date of the Action will be end of May 2013.

The contents of the final publication were discussed. Joachim Schiemann suggested that in addition to scientific evaluation of the Action, dissemination targeted to several stakeholders could be included. The Administrative Officer will find out and give further instructions if the final publication can consist of several parts.

Dirk Bosch has been able to raise additional funds (2.5 k€) for the finalizing of the database. However, additional 2.5k€ is still needed. It was discussed whether it would be possible to allocate part of the central COST final publication budget to complete the database. Administrative Officer recommended that this should be proposed to the Scientific Officer in case the database can be considered as part of the final publication. Dirk Bosch will formulate a proposal.

Chair wanted to get some guidelines from Administrative Officer what can be placed on the Action web page. Administrative Officer pointed out that there are no restrictions from the COST Office and e.g. the reports can be placed there as well as the minutes of the meetings.

The Administrative Officer also confirmed that STSMs can take place in the non-COST member countries.

6. Status of the Action

Reports by the WG leaders

Activities in **WG1** progressed more or less on schedule. All FG leaders gave a status report of their respective activities. More feedback from the industry would be very beneficial. Here the major short term activities/ planned outputs of the Action as these constituted the focus of our discussions are summarized.

Three white papers are in preparation. They focus on developing country interactions and centre on the identification of opportunities and constraints for Molecular Farming in the developing world. Julian Ma and Paul Christou lead this activity with input from collaborators in Cuba and South Africa. Further potential opportunities for input from colleagues in Brazil and South Africa will be explored. During the meeting our non-COST partner Siva Reddy from the ICGEB, Delhi, India, expressed his interest to contribute to this activity. Julian will follow this up as appropriate. The second white paper is being prepared by Harry Thangaraj and its focus is on socially responsible IP licensing for developing countries. Harry indicated that he will distribute questionnaires to get input from COST partners. Joachim Schiemann is in the process of preparing the third white paper which focuses on regulatory issues in the EU. Stefan Schillberg articulated the Action's publication strategy and he indicated that he will have a draft invitation letter ready to send to lead authors of the prospective reviews to be published in a series of issues of Transgenic Research, by the end of October.

To facilitate the evaluation of the different plant production platforms and to support the various communication and dissemination activities of the three working groups a series of perspective articles will be published in the journal Transgenic Research (see Annex 3). **WG2** has taken the lead in this activity. One to two articles will be published per issue. A list of potential articles (9 articles including Introductory and Summary Editorial) has been presented and discussed during the meeting. In addition lead authors and potential co-authors have been suggested and guidelines to be considered when preparing these articles have been presented. Stefan Schillberg will prepare a timeline for inviting authors and deadline for article submission. In addition, Stefan Schillberg and Paul Christou will invite the lead authors to provide a perspective article and inform them about deadlines and an appropriate format for the manuscripts. Both activities will be completed in October 2011.

During the meeting it was also discussed that the white papers for **WG1** and **WG2/3** will be based on the information provided by the perspective articles. Therefore, the preparation of the white papers may start now as a working document but will be finished at the end of the COST Action when all information of the articles are available.

Many of the activities of **WP3** are carried out in close collaboration with WP2. Most efforts in the last period have been spend on the Molecular Farming database. In the past it was decided that in interactive database with information related to molecular farming would be very helpful to the field, and a nice way to aggregate the efforts and results of both WP2 and WP3.

The basis of the database was laid down in the previous period. The last period most efforts were directed to how to deal with the following issues: quality control of the database (preventing pollution), how to deal with access rights (registration/passwords etc.) and two features of the database needed improvement (plot function and global text search). Different options were presented and discussed during the Ghent meeting. It was decided to continue finalizing the format of the database as suggested by WP2 and WP3. In the meantime, several partners have collected about 600 literature references. These are ready to be inserted in the database when it is operational. The results of a “test” questionnaire held in the previous meeting were analyzed and used to rephrase the questionnaire for broader us.

Short Term Scientific Missions (STSM)

Five STSMs were allocated for this period. The Chair will ask an update from the STSM coordinator. In general, people are very happy with the system and pleased with the outcome. It was pointed out that the STSMs can be performed also e.g. in two parts but the reporting should be done only at the end of the mission.

Action Web site

The rapporteur recommended that the Action web page should be improved. Bart van Droogenbroeck summarized the status:

- So far there are 10 publications with COST acknowledgements. Bart will send a reminder to the Action participants to update the list. Links to the papers will be added to the web page.
- The national PMF links will be inserted as well other relevant PMF links
- A LinkedIn option for communication forum will be opened
- Translation of the leaflets to native languages will continue (so far 8 received). These will be added as printable A4 format to the web.
- At the moment the participant page is empty and this will be created. It was agreed that the Chair will distribute the current list and a template to MC members and they will take care of updating the participant lists of their respective countries and estimate the share of ESRs (young scientists with maximum of 8 years after the PhD) and females by using the template.

7. Working plan of the Action for the period 1.4.2011 – 31.3.2012

Budget status

The budget status will be obtained after the Ghent meeting reimbursements have been paid. Administrative Officer clarified the reimbursement rules e.g. the actual accommodation should be requested as agreed flat rate.

Nine members from FA0804 will take part in the Trans-Action workshop in Munich (3rd – 4th November 2011).

It was agreed that for the coming Vienna meeting two nights will be reimbursed. If a deviation is needed this must be communicated with the Chair in advance.

Action plan

How to reach the Deliverables

Publications, update the list

Database, status and development

STSMs, overview

All the above items were communicated well during the annual meeting and only an update of the STSM status will be distributed with the MC meeting minutes. Chair will ask the update from Tomas Vanek (Annex 4)

8. Status of Non-COST country participants

China, India and Australia are the current non-COST country participants. No new applications have been received. The first non-COST country member (Prof. Vanga Siva Reddy) participated the Ghent meeting as an invited speaker.

9. Place and date of future meetings

Trans-Action Communication Workshop, November 3-4, 2011, Munich

- Nine FA0804 participants will join

WG2 & WG3 workshop, February 16-17, 2012, Vienna (Local organizer Herta Steinkellner)

- Date was confirmed and the venue will be the University of Vienna. Registration fee can be collected if needed.

Next annual meeting, date and place

It was decided that the annual meeting during last period of the Action will be arranged (including MC meeting). Agnieszka Sirko offered to organise it in Warsaw, Poland. Timeframe will be around mid September 2012 (weeks 36, 37). Chair will contact AS and confirm the date and inform the Action participants.

Final Action Conference

The final conference will be held in May 2013 (2nd last week). The duration will be three days. The organizing committee was set. It was decided that it consists of Vice-chair of the Action, Chair and WG leaders. Additional members can be invited e.g. local organizers. The committee can meet at COST office in Brussels if needed. It was discussed if the Grant Holder could take the organizational responsibility.

It was discussed how to raise sponsorships for the final conference? Jihong suggested to get some national funds e.g. she could apply some from Norway. Joachim pointed that we could have a wider program and thus be able to attract others e.g. various stakeholders.

It also was discussed what kind of possibilities there would be for organizing a joined conference. PBVA will be most probably arranged at the same time window. Chair will communicate with Julian Ma if there were a satellite possibility or if PBVA conference could be held in different time of the year to avoid redundancy.

The preparation of the program and invited speakers will be started in Vienna in February.

10. Miscellaneous

The Chair will check which of the MC members have not taken any activity to the Action so far in order to replace them with more potent candidates.

George Lomonosoff raised the issue that it is difficult to meet the criteria when applying COST grant for students to join a conference. At least a poster or oral presentation needs to be accepted prior to grant application. However, the conference organisers usually decide at very last moment and there is not enough time to apply the COST grant. Anja promised to take this message further to COST office.

Joachim Schiemann pointed out the sustainability of the activities. The Action will end May 2013. How to proceed from then on? Kristiina Mäkinen suggested the Marie Curie networks (approx 10 groups can make a network). Another possibility is to establish the European Society for PMF e.g. the database could be linked to that, but how to do that in practise still remains an issue.

11. Closing of the meeting

The Chair closed the meeting at 16:15.

List of participants

Name	Country
1. Bosch, Dirk	(NL)
2. Brinch-Pedersen, Henrik	(DK)
3. Cusidó, Rosa	(ES)
4. Christou, Paul	(ES)
5. Depicker, Ann	(BE)
6. Faye, Loic	(FR)
7. Häkkinen, Suvi	(FI)
8. Juodeikiene, Grazina	(LT)
9. Kvarnheden, Anders	(SE)
10. Liu Clarke, Jihong	(NO)
11. Lomonosof, George	(UK)
12. Moravec, Tomas	(CZ)
13. Morisset, Dany	(SI)
14. Mäkinen, Kristiina	(FI)
15. Mäntylä, Einar	(IS)
16. Oksman-Caldentey, Kirsi-Marja	(FI)
17. Ritala, Anneli	(FI)
18. Schiemann, Jochen	(DE)
19. Schillberg, Stefan	(DE)
20. Sirko, Agnieszka	(PL)
21. Steinkellner, Herta	(AT)
22. Strid, Åke	(SE)
23. Tomasson, Thorsteinn	(IS)
24. Van Droogenbroeck, Bart	(BE)
25. Van der Snickt, Anja	COST-Office

News from COST

Open Call of March, 2011 – [oc-2011-1](#)

Three new FA Actions were approved

1. FA1103 | Endophytes in Biotechnology and Agriculture
2. FA1102 | Optimising and standardising non-destructive imaging and spectroscopic methods to improve the determination of body composition and meat quality in farm animals Acronym: FAIM
3. FA1101 | Omics Technologies for Crop Improvement, Traceability, Determination of Authenticity, Adulteration and Origin in Saffron

cost

Annual Progress Conference

Each MC Chair has to present the Action at the yearly APC Meeting of the DC FA

The next DC FA APC Meeting will be in Glasgow on the 27-28-29 June, 2012

The Action Chair of FA0804 will be invited to showcase the Action; what has been achieved during the last 4 years.

Last year of activities

Please note

1. Training schools and STSMs can only take place within the lifetime of the Action
2. The budget can be used within **3 months** after the end of Action for expenses related to the **final event only** – in case you decide that the final conference will be after the end date of the Action please communicate this to me asap
3. The Final Conference can be organized the latest **February 2013** - unless an extension is requested (no additional money though can be allocated)
4. The Final Conference is a wrap-up of the Action's activities and normally signals the end of the Action
5. The **Final publication** is paid from the **General COST budget**, not from the Action's budget



4

Publication

The final publication can be a

- special issue in a journal,
- review or
- Book

Actions are encouraged to have a final publication. Please inform me as soon as possible whether you intend to have one to secure some budget from the publications budget line (if more than 3000 euros 2 offers are requested unless there is a good justification why the selected publisher was chosen)



2

Final Evaluation process

- Evaluation Panel is appointed by the COST Office in consultation with the Rapporteur and Chair **6 months before the end of the Action**

EP: Rapporteur: Henrique GUEDES-PINTO
External Expert
SO as a moderator

- The EP members **have** to participate to the Final Conference
- A **draft** of the **final report** should be made available to the EP members **1 month before** the Final Conference

At this MC meeting

- To avoid delays as previous times please make a plan of next year's activities – **estimated** budget for the time being for **April 2012 to November 2012 is 115 000 euros**
 - **WG meetings**
 - **Final Conference (when, where?) – should cost no more than 60 000 euros**
 - **STSMs**
 - **Publication strategy**

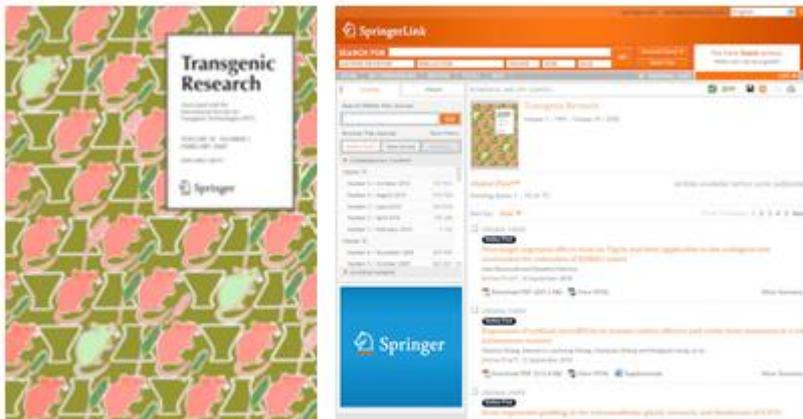
Annex 3.

Publication strategy - implementation



Gent, September 2011

Target journal



Recent MF papers

- 32 MF papers in 2010 and 2011 (PubMed)

human **VACCINES**



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Suggested articles

	Topic	Clarifications and notes	Lead author	Potential co-authors
I	Introductory Editorial	To set the stage and describe briefly publication strategy and philosophy	Paul C	Kirsi-Marja O, Einar M, Stefan S, Bart VD, Dirk B, Julian M, Arjen S.
II	Diseases and target molecules	Emphasis on molecules particularly suited for production in plants	Dirk B	Kirsi-Marja O, Einar M
II	Overcoming current technological barriers	Focus only on technology, IP and other issues under item VI.	Arjen S	Greenovation, Bayer?
III	Plant Production Platforms & Competing non-plant systems	Stable, transient, whole plant, in vitro cultures, etc versus CHO, animals, etc., etc	Stefan S	Yuri Gleba,
IV	Downstream Processing Technologies	Focusing on handling large volumes of plant material, and waste disposal options	Einar M	Morris Moloney, Kristina Mäkinen
V	IP & FTO	All-encompassing, also including elements from all other topics	Harry Thangaraj	Julian M, Anatole Kratiger
VI	Developing Countries and Molecular Farming	This should bring together all aspects discussed in other reviews but having developing countries as a unifying theme	Ed Rybicki	Merardo Pujol, Cuba, possibly the guy from Argentina (???)
VII	Lowering regulatory burden	Europe, US and global. Focus should be specifically lowering regulatory burden	Jochen Schiemann	Bart VD, Beth Hood, Julian Ma, Paul C
VIII	Strategies for constructive public engagement	With proposed case studies. Objective being to highlight profile of MF and give examples of benefits, etc	Emilio Rodriguez-Cerezo	George Sakelaris, Kalajantonakis (U. Missouri, not sure about spelling)
IX	Summary Editorial	Wrap up and put forward key recommendation from each review then synthesize what MF might be like 5-10 years from now	Julian Ma	Kirsi-Marja O, Einar M, Stefan S, Bart VD, Dirk B, Paul C, Arjen S.

Points to consider

1. No limit on co-authors but at least minimum 2 from 2 different COST member labs. More, better!
2. Involve experts from non-COST member labs as well as industry
3. Remember that these are prospective reviews (i.e. Looking towards the next 5 -10 years)
4. Limit each author to 2 different reviews (first-author or co-author)
5. I and IX excluded from 4 above
6. Include "younger" co-authors as well!
7. Include attractive graphics, visuals, etc
8. Avoid cataloguing and encourage reasonable speculation and forward thinking.
9. Recommendations for co-authors are just that. Lead author can decide co-authors.
10. Remember that these are meant to be prospective reviews, i.e. looking towards the future!

White paper

- White papers for W1 and WG2/3 may include and refer to reviews
→ published at the end of the article series?

Next steps

- Define article format and timelines
- Contact authors



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Annex 4.

- 1. COST STSM Reference Number:** COST-STSM-FA0804-4409
Period: 15/04/2009 to 20/04/2009
STSM Applicant: Mr Andreas, Loos, Department for Applied Genetics and Cell Biology, Boku, Vienna (AT), andreas.loos@boku.ac.at
STSM Topic: Subcellular localization and N-glycosylation of seed produced antibodies
Host: Ann Depicker, VIB/UGent, Gent (BE), ampic@psb.ugent.be
- 2. COST STSM Reference Number:** COST-STSM-FA0804-04581
Period: 06/04/2009 to 05/05/2009
STSM Applicant: Mrs Gergana Zahmanova, University of Plovdiv, Department of Plant Physiology and Molecular Biology
STSM Topic: Expression of HBcAg-AIV chimaeras in plants using CPMV-HT technology
Host: George Lomonosoff, John Innes Centre, Norwich (UK), george.lomonosoff@bbsrc.ac.uk
- 3. COST STSM Reference Number:** COST-STSM-FA0804-4376
Period: 20/04/2009 to 20/05/2009
STSM Applicant: Dr Jitka Folwarczna, Institute of Experimental Botany v.v.i., Academy of Sciences of the Czech Republic, Prague (CZ), folwarczna@ueb.cas.cz
STSM Topic: Aim of the work is to learn various methods connected to plant molecular farming
Host: Agnieszka Sirko, Institute of Biochemistry and Biophysics, Polish Academy of Sciences, Warsaw (PL), asirko@ibb.waw.pl
- 4. COST STSM Reference Number:** COST-STSM-FA0804-4569
Period: 01/06/2009 to 31/08/2009
STSM Applicant: Dr Mathilde Francin-Allami, INRA, 44316 (FR), allami@nantes.inra.fr
STSM Topic: Study of wheat prolamins traffic in plant cell model
Host: Chris Hawes, Oxford Brookes University, OX3 (UK), chawes@brookes.ac.uk
- 5. COST STSM Reference Number:** COST-STSM-FA0804-5451
Period: 11/01/2010 to 09/04/2010
STSM Applicant: Ms Mariya Petrova, Institute of Genetics "Acad. D. Kostoff", Bulgarian Academy of Sciences, Sofia (BG), marry_petrova@yahoo.com
STSM Topic: Production of recombinant proteins in plants and plant cell cultures
Host: Anneli Ritala-Nurmi, VTT Technical Research Centre of Finland, Espoo (FI), anneli.ritala@vtt.fi
- 6. COST STSM Reference Number:** COST-STSM-FA0804-5907
Period: 12/04/2010 to 03/05/2010

- STSM Applicant:** Ms Verena Hehle, St. George`s Hospital Medical School, London (UK), v.hehle@gmail.com
STSM Topic: Mass Spectrometric analysis of recombinant protein proteolytic degradation in transgenic plants
Host: Marc Boutry, Université Catholique de Louvain, Louvain-la-Neuve (BE), marc.boutry@uclouvain.be
- 7. COST STSM Reference Number:** COST-STSM-FA0804-5906
Period: 15/03/2010 to 25/03/2010
STSM Applicant: Mr César Feliciano Cruz Fernández, Centro de Biotecnología y Genómica de Plantas (CBGP), UPM-INIA, Madrid (ES), cesarfcruz@gmail.com
STSM Topic: Chemical modification of viral capsids for high yield antibody production
Host: David Evans, John Innes Centre (JIC), Norwich (UK), dave.evans@bbsrc.ac.uk
- 8. COST STSM Reference Number:** COST-STSM-FA0804-5503
Period: 11/01/2010 to 11/04/2010
STSM Applicant: Ms Vilma Narbutaite, Kaunas University of Technology, Kaunas (LT), vilma.narbutaite@stud.ktu.lt
STSM Topic: Transient expression of heterologous proteins by LAB into plants using versatile expression vectors
Host: George Lomonosoff, John Innes Centre (JIC), Norwich (UK), george.lomonosoff@bbsrc.ac.uk
- 9. COST STSM Reference Number:** COST-STSM-FA0804-5542
Period: 15/03/2010 to 30/04/2010
STSM Applicant: Ms Valeska Hauptmann, Leibniz Institute of Plant Genetics and Crop Plant Research (IPK), 06466 Gatersleben (DE), hauptmann@ipk-gatersleben.de
STSM Topic: Spider silk variants from plants
Host: Jacques Guéguen, INRA, 44316 Nantes Cedex 03 (FR), gueguen@nantes.inra.fr
- 10. COST STSM Reference Number:** COST-STSM-FA0804-6771
Period: 15/07/2010 to 09/10/2010
STSM Applicant: Dr. Hana Hoffmeisterova, Institute of Experimental Botany v.v.i., Academy of Sciences of the Czech Republic, hoffmeisterova@ueb.cas.cz
STSM Topic: Molecular Characterization of Antibodies Expressed in Plants
Host: Prof. Ann Depicker, Laboratory of Gene Regulation, Department of Plant Systems Biology, VIB, Gent University, Gent (B), anpic@psb.vib-ugent.be
- 11. COST STSM Reference Number:** COST-STSM-FA0804-7040
Period: 18/10/2010 to 21/01/2011
STSM Applicant: Dr Elisa Gecchele, University of Verona, Verona (IT), elisa.gecchele@univr.it
STSM Topic: Purification of GAD65mut from transgenic tobacco leaf tissue

Host: Stefan Schillberg, Fraunhofer Institute IME, Aachen, (DE),
stefan.schillberg@ime.fraunhofer.de

In progress:

12. COST STSM Reference Number: COST-STSM-FA0804-7607

Start Date: 2011-02-10

STSM Applicant: Mr. Rodrigo Corredor, University of Bern, (CH),
rodrigocorredor@gmail.com

STSM Topic: Intellectual property

13. COST STSM Reference Number: COST-STSM-FA0804-8805

Start Date: 2011-08-29

STSM Applicant: Mr. Vikram Viridi, Department of Plant Systems Biology, VIB,
University Gent (BE), vivir@psb.vib-ugent.be

STSM Topic: Evaluation of phaseolin promoter