

PD Dr. Carsten Schultz

Interdisciplinary Chemistry Group

Short report, ESF-funded workshop 'Fluorescent and lipid probe development'

Dear Dr. Beckers, dear Ms. Stirnberg,

First, I would like to thank the ESF for making possible a fantastic workshop on fluorescent and lipid probe development with 30 participants. The following lines serve as a report on the details and the success of the workshop.

All funded PIs of the TraPPs consortium with several students and postdocs plus the associated Christoffer Lagerholm from Odense attended the workshop. In addition, we had Volker Hauke from the 'Synapse' consortium and a couple of students from Walter Nickel's group (Unconventional Protein Secretion (UPS) consortium) participating. All consortia were invited to participate and three of the EuroMembrane consortia were well represented. All participants presented their current work in lectures, in case of the students in short talks. Especially for the students, the performance and very lively discussion in front of a keen and critical audience was a memorable experience with an enormous training effect. We were able to attract a number of very high ranking speakers including Tobias Meyer from Stanford, a specialist in phosphoinositide probes, Jin Zhang from Johns Hopkins University in Baltimore, best known for genetically encoded fluorescent probes, and Philippe Bastiaens, director for systems cell biology at the MPI in Dortmund. The lively discussions ended frequently in useful suggestions and the implementation of new collaborations. I asked the participants for information about potential new collaborations initiated at the workshop. Please, find the respective list at the end of this report.

The workshop was held at a historic villa located at the West shore of lake Como. Additional accommodation was available at a next door albergo. The villa provided full board for all participants. The total amount spent for accommodation, food and on-site services by the albergo owner such as airport/train transfer was 14,400 Euros. The end-of-workshop dinner at a local restaurant was almost entirely sponsored by Avanti Polar Lipids. Travel expenses were very much kept at bay due to the discipline of all participants. Car travellers, mostly from Germany, were reimbursed a fixed amount. Total travel expenses were 6,300 Euros, leaving about 4,300 Euros of unused funds that will be relocated to the ESF.

In the light of the enormous success of the workshop, we would like to propose repeating the event at the same location in 2011. We think that the scientific advance produced by the workshop and the training effect for the students justifies the expense. Apart from maintaining the very high scientific level, goals for the next workshop are the participation of all EuroMembrane-funded consortia and an increased focus on systems biology aspects. The tentative title is 'Membrane systems biology'.

Best wishes

Carsten Schultz, also in the name of Matthias Wymann

Selected collaborations beyond TraPPs initiated through the workshop

Schultz – Hauke: use of synthetic phosphoinositides to study neuronal activity

Zhang – Schultz: development of fluorescent phosphatase probes

Meyer – Schultz: caged lipids sent to Stanford

Schultz – Bastiaens: caged lipids to study signaling networks

Jalink – Bastiaens: fluorescent screen of chloride channels

Wymann – Jalink: SNAP/Halotag as labels for STORM imaging

Schultz – Jalink: EGF receptor internalization induced by artificial lipids

Jalink – Oliver: application of V-controlled lipid turnover in migration studies

ESF-funded workshop on Lipid and fluorescent probe development



Schedule

16.10.

14-19 Arrival

20:30 Dinner at the villa

17.10. Lipid probes and their applications

9:25 Opening remarks

9:30 Matthias Wymann "Functional compartmentalization of PIP₃ signaling"

10:15 Dorus Gadella "Improved FRET sensors for
monitoring signalling across the membrane"

11:00 Coffee

11:30 Anastasia Bolshakova "Visualizing membrane-associated structures induced by adhesion and growth factors"

11:50 Pirmin Rösel "Stable luminescent iridium complexes for cellular signaling"

12:10 Harald Stenmark "Class III PI 3-kinase and membrane dynamics"

13:00 Lunch

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14:30 Walk to the Castle of Rezzonico

16:30 Coffee

17:00 Volker Hauke "Phosphoinositide regulation of endocytic membrane traffic"

17:45 Helena Andreas "Structural investigations on Fibroblast Growth Factor 2 (FGF2) membrane translocation"

18:00 Julia Steringer: A role of PI(4,5)P₂-enhanced Oligomerization in Unconventional Secretion of Fibroblast Growth Factor 2 (FGF2)

18:15 Break

18:30 Kay Schink "Tracking of PI(3)P in dividing cells"

18:45 Thommie Karlsson "Probing the dynamics of membrane domain interactions with the cytoskeleton and water fluxes"

20:00 Dinner at the villa

18.10. Fluorescent probes and their applications

9:30 Olivier Pertz "A modular system to construct FRET-based probes for visualization of signaling events"

10:15 Dominiq Oliver "Voltage sensitive phosphatases as tools for characterizing phosphoinositide sensors and effectors"

11:00 Coffee

11:30 Tobias Meyer "Tracking signaling processes in collective cell migration"

12:15 Kees Jalink "Zooming in on signal transduction by FRET"

13:00 Lunch

14:00 Walk up the mountain

16:30 Coffee

17:00 Carsten Hoffmann "GPCR based FRET-probes to investigate ligand-specific conformational changes in living cells"

17:45 Break

18:00 Paul Heppenstall "Mouse genetic tools for in vivo imaging"

18:45 Joachim Goedhart "One for three: expression of a heterotrimeric FRET sensor from a single plasmid"

20:00 Dinner at the villa

19.10. Probe technology development

9:30 Christoffer Lagerholm "Single particle tracking with quantum dots: possibilities of both multispecies SPT and high-speed SPT"

10:15 Jin Zhang "Spatiotemporal regulation of protein kinases: tales of PKA and PKB"

11:00 Coffee

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- 11:30 Kai Johnsson/Matthias Brun "Semisynthetic fluorescent sensor proteins"
12:20 Mirjam Zimmermann/Ruben Cal "Novel synthetic routes to inducible rapalogs"

13:00 Lunch

14:30 Walk to the beach

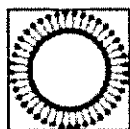
16:30 Coffee
17:00 Florent Beaufils „Design of cell permeable protein dimerizers”
17:15 Mateusz Putyrski “Manipulating calcium signaling by translocating proteins”
17:30 Kevin Crosby "Towards super-resolution imaging of phosphoinositide signaling"
17:45 Beer
18:00 Karl-Eric Magnusson “Multifunctional probes for live-cell and still-life imaging”
18:20 Carsten Schultz “A menu of lipids and FRET probes”
20:00 Dinner in Menaggio and end of workshop

20.10. Departure day

ESF Workshop on 'Fluorescent and lipid probe development'

Participants list

	Name	Institution	Arrival	Depart	Travel	
1	Helene Andreas	Uni Heidelberg	16.10.	20.10.	car	
2	Philippe Bastiaens	MPI Dortmund	17.10	20.10	car	
3	Florent Beauflis	Uni Basel	16.10.	20.10.	train/car	
4	Anastasia Bolshakova	Uni Linkoeping	16.10.	21.10.	plane/car	
5	Matthias Brun	EFPL Lausanne	16.10.	20.10.	train	
6	Ruben Cal	Uni Basel	16.10.	20.10.	Tran/car	
7	Dominik Erhard	Uni Basel	16.10.	20.10.	Train/car	
8	Dorus Gadella	Uni Amsterdam	16.10.	20.10.	train	
9	Joachim Goedhart	Uni Amsterdam	16.10.	19.10.	train	
10	Volker Hauke	FU Berlin	16.10.	18.10.	Plane/car	
11	Paul Heppenstall	EMBL Monterotondo	16.10.	20.10.	Plane/car	
12	Carsten Hoffmann	Uni Wuerzburg	16.10.	20.10.	car	
13	Kees Jalink	NCI Amsterdam	16.10.	20.10.	train	
14	Kai Johnsson	EFPL Lausanne	16.10.	20.10.	car	
15	Thommie Karlsson	Uni Linkoeping	16.10.	21.10.	Plane/car	
16	Christoffer Lagerholm	Uni Odense	16.10.	20.10.	plane	
17	Karl-Eric Magnusson	Uni Linkoeping	16.10.	20.10.	Plane/car	
18	Tobias Meyer	Stanford University	16.10.	20.10.	car	
19	Dominik Oliver	Uni Marburg	16.10.	20.10.	car	
20	Olivier Pertz	Uni Basel	16.10.	20.10.	Train?	
21	Mateusz Putyrski	EMBL Heidelberg	16.10.	20.10.	Car/train	
22	Pirmin Roesel	Uni Basel	16.10.	20.10.	Train/car	
23	Slavka Bastiaens	MPI Dortmund	17.10	20.10	car	
24	Kay Schink	Uni Oslo	16.10.	20.10.	plane	
25	Carsten Schultz	EMBL Heidelberg	16.10.	20.10.	Car/plane	
26	Harald Stenmark	Uni Oslo	16.10.	20.10.	plane	
27	Julia Steringer	Uni Heidelberg	16.10.	20.10.	car	
28	Matthias Wymann	Uni Basel	16.10.	19.10.	Train/car	
29	Myriam Zimmermann	Uni Basel	16.10.	20.10.	Train/car	
30	Jin Zhang	Johns Hopkins Univ.	16.10.	20.10.	Plane/car	



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ANNEX

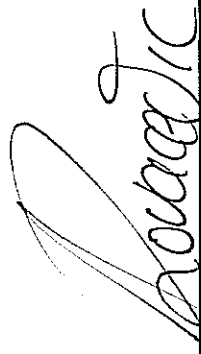
Detailed report of Expenditures to be sent to the ESF

Accommodation:	6.868,91
<i>Invoice 1 (date, description)</i>	
Oct. 2010 HARM SCHULTZ TRAVEL RBST 20/10 ESF WORKSHOP+LAB RE	2.468,00
*S.SIRO 16-20/10/2010/CENTRALZETTI SRL	4.400,91
Travel:	6.856,29
Tobias Meyer	478,10
Karl Eric	1.979,82
Volker Haucke	285,80
Harm Schultz (on site travel service)	500,00
Carsten Hoffmann	200,00
Matthias Wymann	775,74
Bernd Christffer	626,51
Dominik Oliver	250,00
Jin Zhang	725,27
Joachim Goedhart	90,64
Kay Oliver	347,81
Paul Heppenstall	217,12
Mateusz Putyrski	18,91
Julia Sterniger	111,55
Carsten Schultz	249,02
Meals	7.057,00
<i>Date meal 1 (nb of participants)</i>	
*Trip from 16.10.10 To 20.10.10 to Griante //27 Part.	2.000,00
*Trip from 12.10.10 To 16.10.10 to Lago di Como //30 Part.	700,00
VILLA CAMILLA MENU PREPAYMENT 27 PAX/ 20.10.2010 // 30 Part.	5.346,00
AVANTI POLAR SCHULTZ RBST	-989,00

TOTAL	20.782,20
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Carsten Schultz



Jasmina Kovacevic

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