focus

Single Molecule Activation and Computing

SEVENTH FRAMEWORK PROGRAMME

Work Package WP n. 8
Management, dissemination and exploitation

Deliverable D8.1
Publication and main update of the project web site and intranet:

Expected date: 01/01/2013

COLLABORATIVE PROJECT for

ICT-2009 8.7

FET Proactive 7

Project n. 270483

Start Date: 01/01/2011

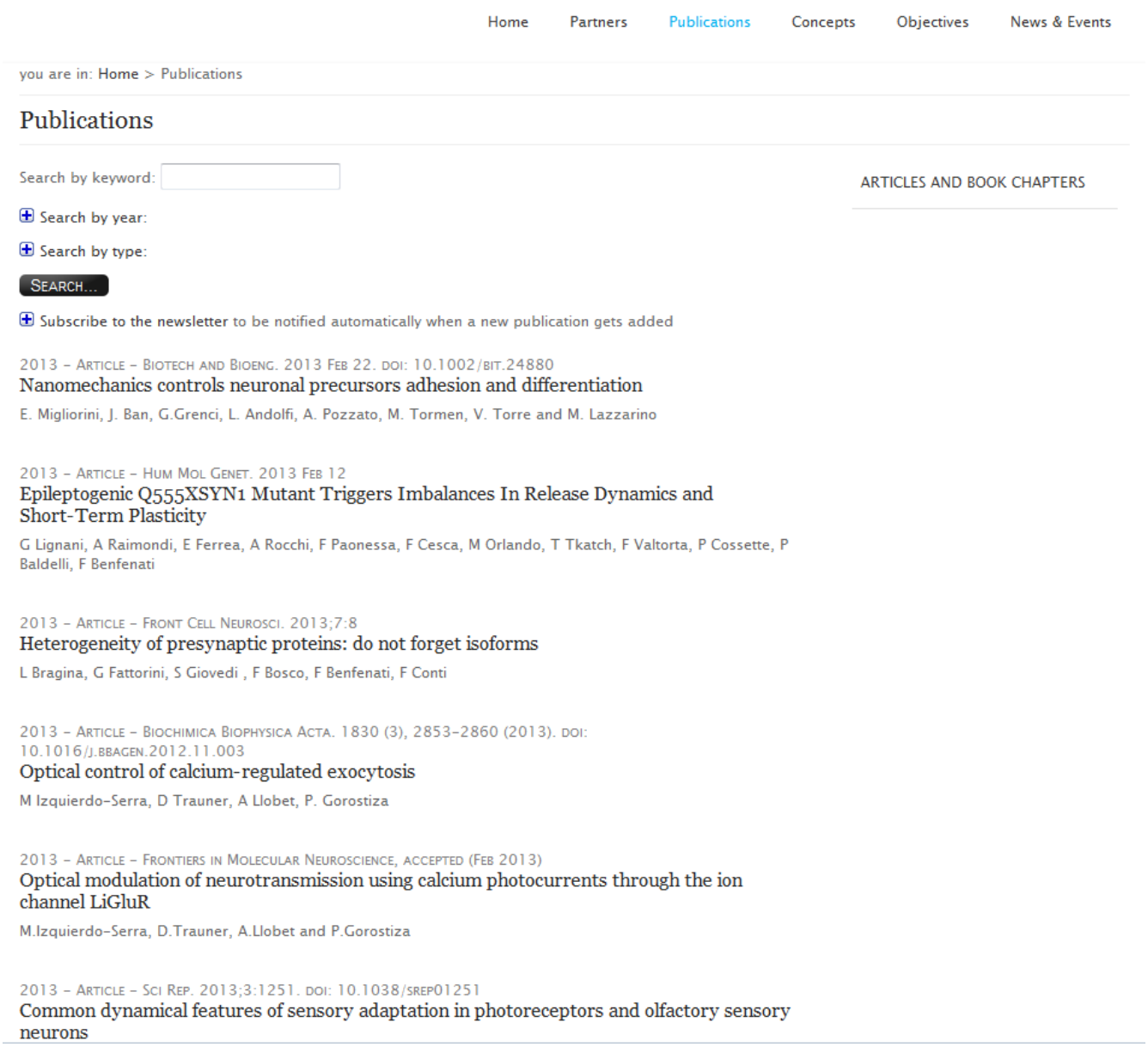
Version: 2 **Date:** 28/06/2013 **Number of Pages:** 6	**WP leader**: SISSA **Deliverable authors:** Manuela Schipizza Lough **For more info please contact:** lough@sissa.it	**Status:** **[ ] Template** **[ ] Daft** **[X] Final** **[ ] Released to EC**

Nature	**Dissemination Level**
[ ] R = Report	**[x] PU** = Public,
[ ] P = Prototype	**[ ] PP** = Restricted to other programme participants (including the Commission Services),
[ ] D = Demonstrator	**[ ] RE** = Restricted to a group specified by the consortium (including the Commission Services),
[x] O = Other	**[ ]CO** = Confidential, only for members of the consortium (including the Commission Services).

The present Deliverable has been accomplished. Additional information and references (or full articles, if open access) to the results achieved are available online from the FOCUS website.

The Publications section has been updated with all the abstracts of the works related to the project and the PDF of the articles in Open Access.

Example:



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Publications

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ARTICLES AND BOOK CHAPTERS

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2013 – ARTICLE – BIOTECH AND BIOENG. 2013 FEB 22. DOI: 10.1002/BIT.24880
Nanomechanics controls neuronal precursors adhesion and differentiation
E. Migliorini, J. Ban, G.Grenci, L. Andolfi, A. Pozzato, M. Tormen, V. Torre and M. Lazzarino

2013 – ARTICLE – HUM MOL GENET. 2013 FEB 12
Epileptogenic Q555XSYN1 Mutant Triggers Imbalances In Release Dynamics and Short-Term Plasticity
G Lignani, A Raimondi, E Ferrea, A Rocchi, F Paonessa, F Cesca, M Orlando, T Tkatch, F Valtorta, P Cossette, P Baldelli, F Benfenati

2013 – ARTICLE – FRONT CELL NEUROSCI. 2013;7:8
Heterogeneity of presynaptic proteins: do not forget isoforms
L Bragina, G Fattorini, S Giovedi , F Bosco, F Benfenati, F Conti

2013 – ARTICLE – BIOCHIMICA BIOPHYSICA ACTA. 1830 (3), 2853–2860 (2013). DOI: 10.1016/J.BBAGEN.2012.11.003
Optical control of calcium-regulated exocytosis
M Izquierdo-Serra, D Trauner, A Llobet, P. Gorostiza

2013 – ARTICLE – FRONTIERS IN MOLECULAR NEUROSCIENCE, ACCEPTED (FEB 2013)
Optical modulation of neurotransmission using calcium photocurrents through the ion channel LiGluR
M.Izquierdo-Serra, D.Trauner, A.Llobet and P.Gorostiza

2013 – ARTICLE – SCI REP. 2013;3:1251. DOI: 10.1038/SREP01251
Common dynamical features of sensory adaptation in photoreceptors and olfactory sensory neurons

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Optical modulation of neurotransmission using calcium photocurrents through the ion channel LiGluR

ARTICLES AND BOOK CHAPTERS

PUBLICATION YEAR: 2013
BIOGRAPHICAL DETAILS: Frontiers in Molecular Neuroscience, accepted (Feb 2013)
AUTHORS: M.Izquierdo-Serra, D.Trauner, A.Llobet and P.Gorostiza

A wide range of light-activated molecules (photoswitches and phototriggers) have been used to the study of computational properties of an isolated neuron by acting pre and postsynaptically. However, new tools are being pursued to elicit a presynaptic calcium influx that triggers the release of neurotransmitters, most of them based in calcium-permeable Channelrhodopsin-2 mutants. Here we describe a method to control exocytosis of synaptic vesicles through the use of a light-gated glutamate receptor (LiGluR), which has recently been demonstrated that supports secretion by means of calcium influx in chromaffin cells. Expression of LiGluR in hippocampal neurons enables reversible control of neurotransmission with light, and allows modulating the firing rate of the postsynaptic neuron with the wavelength of illumination. This method may be useful for the determination of the complex transfer function of individual synapses.

And also the NEWS and EVENTS section has been updated with the press releases from the last publications and/ or events:

Example:

LA RIVISTA IN EDI
La scienza d
Dall'economia ai
delle nostre capa
In edicola dal 3
ABBONAMENTI E R

Le Scienze
EDIZIONE ITALIANA DI SCIENTIFIC AMERICAN

ZOOM SU cosmologia evoluzione memoria ambiente spazio co

18 giugno 2013

IRB Barcelona: Farmaci regolati con la luce, italiana partecipa a una pioneristica ricerca in nanoingegneria chimica

Dizionario Mail Stampa

Consiglia 13
Tweet 2
+1 0

SULLO STESSO ARGOMENTO

DAL SITO

06/06/2013
Le molecole come non le abbiamo mai viste

23/04/2012
Come regolare i flussi di calore alle nanoscale

12/11/2012
Un motore che funziona con una molecola sola

11/07/2012
Controllare la chiralità con la radiazione

05/09/2011
Il più piccolo motore elettrico

Comunicato stampa - La beneventana Laura Nevola, assieme ai colleghi dell'Istituto di ricerca biomedica di Barcellona (IRB Barcelona) e dell'Istituto di bioingegneria catalano (IBEC), ottiene molecole fotocommutabili (photoswitchable) per controllare in maniera remota e non invasiva l'interazione fra le proteine. Si tratta di uno strumento che servirà come prototipo per sviluppare farmaci fotocommutabili, il cui pregio sarà quello di limitare a una regione e a un tempo determinato l'effetto di un composto chimico, riducendo così gli effetti collaterali in altre regioni. L'articolo ha guadagnato la copertina nonché lo status di "very important paper" dell'Angewandte Chemie, ed è un risultato rilevante del progetto europeo OpticalBullet finanziato dal Consiglio europeo della ricerca (ERC)

fisica nanotecnologie chimica

Barcellona, martedì 18 giugno 2013.- La cooperazione tra chimici, biotecnologi, farmacologi e fisici di diverse istituzioni catalane, guidati da Pau Gorostiza, dell'IBEC e da Ernest Giralt, dell'IRB Barcelona, ha prodotto una scoperta che porterà allo sviluppo di molecole terapeutiche regolate con la luce. La scoperta, pubblicata oggi online sulla rivista di riferimento internazionale dei chimici, la tedesca Angewandte Chemie, è stata anche qualificata "very important paper", un riconoscimento che va solo al 5% degli articoli accettati per la pubblicazione. Sarà la copertina del numero di luglio.

European Meeting on Phototransduction 2013

Date & place: June, 19–22, 2013. Delmenhorst, GERMANY,
Venue:

Hanse-Wissenschaftskolleg
Lehmkuhlenbusch 4
27753 Delmenhorst
Germany

Organizers:

- Prof. Dr. Karl-Wilhelm Koch
  Carl von Ossietzky Universität Oldenburg
- Prof. Dr. Daniele Dell´Orco
  University of Verona, Italy

Research on molecular sensing has made significant progress in the past 10 – 15 years to unravel numerous fascinating signaling pathways. Molecular oriented techniques have provided us with a large complexity of signaling building blocks and some of the main players in cell signaling - G-protein-coupled receptors, G-proteins, effectors of G-proteins, ion channels and calcium-binding proteins, to name a few - derive chiefly from a few senses only (usually vision and olfaction). In particular research on phototransduction has significantly developed in the last four decades leading to computational systems biology approaches in order to understand these vision related sensory signaling steps in quantitative terms. However, we still lack detailed knowledge on mechanistic aspects related to the deactivation of the excitation cascade, the recovery of the photoreceptor cell to the dark state and the adaptive properties of the cell. In addition, new trends in the phototransduction field have developed in the last years including differences between rod and cone signaling, transmission of the visual signal to second-order neurons and intracellular protein trafficking, just to name a few. Moreover, recent technological and methodological advances call for some reconsideration of the classical picture evoked to describe the molecular processes and new model organisms have been introduced, which point to unexpected complexity of the signal transduction regulation in different photoreceptor types. Thus, the meeting will focus on the following topics:

- Crystal clear or unresolved? Current issues in phototransduction
- Multiscale/ computational approaches to phototransduction
- Model organisms in phototransduction
- Novel tools and experimental approaches

Related Files
EMP2013-group_picture-1.pdf

NEWS ARCHIVE

NEWS & EVENTS

June, 19–22, 2013. Delmenhorst, GERMANY, European Meeting on Phototransduction 2013 « Venue: Hanse-Wissenschaftskolleg Lehmkuhlenbusch 4 27753 Delmenhorst Germany Organizers: Prof. Dr. Karl-Wilhelm Koch Carl von Ossietzky Universität Oldenburg Prof. Dr. Daniele Dell'Orco University of Verona, It... »

Finally, we have added some advertisements for future events: