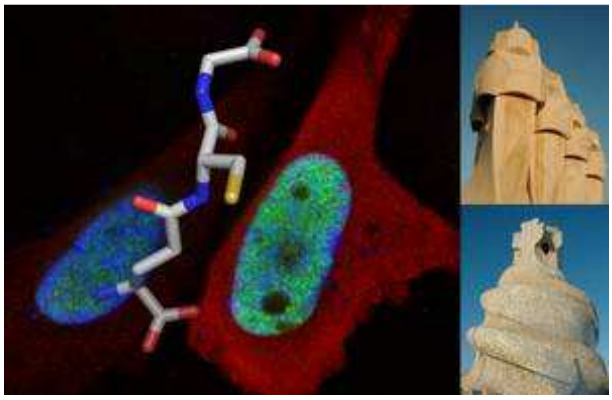
ESF-EMBO Symposium

Glutathione and Related Thiols in Living Cells

4-9 September 2011
Hotel Eden Roc, Sant Feliu de Guixols, Spain



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Chair: **Joris Messens**, *VIB Department Structural Biology, BE*

Co-Chair: **Arne Holmgren**, *Karolinska Institute Stockholm, SE*

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This conference is organised with support from:

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Sunday 4 September	
17:00 – 19:30	Registration at ESF desk
19:30 – 20:00	Welcome drink
20:00	Dinner
Monday 5 September	
08.45-09.00	Conference Opening and Welcome Message from the Chair, Joris Messens
09.00-09.40	**Bob Buchanan**, *University of California, US* Thioredoxin and Redox Regulation Reach Out to the Third Domain of Life
Session I - Redox signaling and regulation **Chair: Elias Arnér,** *Karolinska Institutet, SE*	
09.40-10.20	**Jonathan Stamler**, *Institute for Transformative Molecular Medicine, Case Western Reserve University and University Hospitals, US* Paradigms for Protein S-nitrosylation and Denitrosylation
10.20-10.40	**Katarina Johansson**, *Karolinska Institutet, SE* Expanding the Knowledge of Redox Regulation - Development of Tools to Simultaneously Determine Key Transcription Factor Activities in Individual Cells
10.40-11.00	Coffee break
11.00-11.40	**Sue Goo Rhee**, *Ewha Womans University , KR* Intracellular Messenger Function of Hydrogen Peroxide and Its Regulation via Peroxiredoxin
11.40-12.20	**Stuart Lipton**, *Sanford|Burnham Medical Research Institute, US* Transnitrosylation of XIAP Regulates Caspase-Dependent Neuronal Cell Death
12.20 -12.40	**Aeid Igbaria**, *CEA Saclay, FR* The function of glutathione in eukaryotic cells and its cellular compartmentation
13:00	Lunch and break
15.00-17.00	Poster session with Coffee *(please see poster list for more details)*
Session II – Antioxidants defense by low molecular weight thiols **Chair: Katja Becker,** *Giessen University, DE*	
17.00-17.40	**Luise Krauth-Siegel**, *Universität Heidelberg, DE* Hydroperoxide detoxification in the unique trypanothione metabolism of African trypanosomes
17.40-18.20	**Alfonso Pompella**, *University of Pisa, IT* Cellular and soluble gamma-glutamyltransferase: glutathione, thiols and beyond
18.20-18.40	**Koen Van Laer**, *Brussels Center for Redox Biology, VIB-VUB, BE* The mycoredoxin-1 defense mechanism against oxidative stress in *Mycobacterium tuberculosis*

18.40-19.00	**Chris Hamilton**, *University of East Anglia, UK,* The chemical thiology of bacillithiol: An unique biothiol in B. anthracis, B. cereus, S. *aureus* and other Low G+C Gram positive bacteria
19:15	Dinner
21:00 – 23:00	Poster session with open bar
Tuesday 6 September	
Session III – Thiol-based catalysis and oxidative stress **Chair: Joris Messens,** *VIB Department Structural Biology, BE*	
09.00-09.40	**Leslie Poole**, *Wake Forest School of Medicine, US* Investigation of biologically-relevant protein oxidation
09.40-10.20	**Lars Hederstedt**, *Lund University, SE* Extracytoplasmic protein disulfide bond management in the Gram-positive bacterium Bacillus subtilis
10.20-10.40	**Kostas Tokatlidis**, *Institute of Molecular Biology and Biotechnology, GR* Chaperone-induced folding, a novel targeting signal and substrate mimicry control redox trapping and recycling in mitochondria
10:40 – 11:00	Coffee Break ad Group Photo
11.00-11.40	**Ursula Jakob**, *University of Michigan, US* Oxidative Stress and Redox Regulation
11.40-12.00	**Katleen Denoncin**, *Brussels Center for Redox Biology, de Duve Institute, WELBIO-UCL, BE* Redox regulation of the periplasmic L-arabinose binding protein
12.00-12.20	**Ester Zito**, *University of Cambridge, UK* Redundancy of disulfide oxidases in mammals
12:30 - 14:30	Lunch and break
15.00-17.00	Poster session with Coffee *(please see poster list for more details)*
Session IV: Iron sulfur and Thiol conjugates **Chair: Roland Lill,** *Philipps Universität Marburg, DE*	
17.00-17.40	**Christopher Lillig**, *University Marburg, DE* Glutaredoxins at the intersection of redox regulation and iron homeostasis
17.40-18.20	**Nicolas Rouhier**, *Nancy University, FR* Investigating redox- and iron-sulfur cluster-related functions of plant monothiol glutaredoxins
18.20-18.40	**Carsten Berndt**, *Karolinska Institute, SE* The role of dithiol Glutaredoxins during embryonic development and differentiation
18.40-19.00	**Caryn Outten**, *University of South Carolina, US* Sensing and Regulating Intracellular Iron Using GSH and Fe-S Clusters

19:15	Dinner
21:00 – 23:00	Poster session with open bar
Wednesday 7 September	
Session V – Redox Structural Biology **Chair: Leslie Poole,** *Wake Forest School of Medicine, US*	
09.00-09.40	**Jenny Martin**, *University of Queensland, AU* Targeting bacterial redox proteins to develop compounds with antivirulence activity
09.40-10.20	**Todd Lowther**, *Wake Forest School of Medicine, US* Molecular mechanism of the repair of hyperoxidized peroxiredoxins by sulfiredoxin
10.20-10.40	**Kenji Inaba**, *Kyushu University, JP* Structure and mechanism of the protein disulfide formation systems in human cells
Session VI – Folding **Chair: Johannes Herrmann,** *University of Kaiserslautern, DE*	
11.00-11.40	**Agnieska Chacinska**, *International Institute of Molecular and Cell Biology, PL* Disulfide bond formation in mitochondria – nothing by chance
11.40-12.20	**Neil Bulleid**, *University of Glasgow,, UK* Multiple ways to make disulphides in the ER of mammalia
12.20-12.40	**Jan Riemer**, *University of Kaiserslautern, DE,* Oxidative folding in mitochondria of mammalian cells
13:00	Lunch
15:00	Excursion
19:30	Get together Drink and Conference Dinner
Thursday 8 September	
Session VII – Redoxins **Chair**: **John Mieyal**, *Case Western Reserve University, US*	
09.00-09.40	**Sabine Zachgo**, *University of Osnabrück, DE* ROXYs: glutaredoxins and flower development
09.40-10.20	**Junji Yodoi**, *Kyoto University, JP* Anti-Inflammatory redox regulation by Redoxisome with thioredoxin/TRX and TBP-2/TXNIP/VDUP-1
10.20-10.40	**Elizabeth Veal**, *Newcastle University, UK,* Responding to stress; peroxiredoxins as regulators of stress responses and ageing
10.40-11.00	Coffee break
Session VIII Redox Technologies **Chair**: **Lars Leichert**, *Ruhr-University Bochum, DE*	
11.00-11.40	**Kate Carroll**, *The Scripps Research Institute, US* Painting the Cysteine Chapel: New Tools to Probe Oxidat

11.40-12.20	**Merridee Wouters**, *Deakin University, AU* Identifying components of thiol-based signalling pathways: computational approaches
12.20-12.40	**Pablo Martinez-Acedo**, *CBMSO - CSIC/UAM, ES* GELSILOX: simultaneous high-throughput identification and quantification of thiol redox state and total proteomes
13:00	Lunch and break
15.00-17.00	Poster session with Coffee *(please see poster list for more details)*
Forward Look **Chair**: **Arne Holmgren**, *Karolinska Institute, SE*	
17.00-17.20	**Karl Josef Dietz**, *University of Bielefeld, DE* The chloroplast 2-Cys peroxiredoxin as a redox regulatory hub in the chloroplast
17.20-18.20	**Frederico Pallardo**, *University of Valencia, ES* Role of Nuclear glutathione in the control of cell
18.20-19.20	**Leopold Flohé**, *Otto-von Guericke-Universität Magdeburg, DE* Changing paradigms in thiol redoxology
20:00	Poster session with open bar
Friday 9 September	
Breakfast and Departure	

List of Accepted Posters

Posters are organised into three different sessions. During the afternoon sessions participants will introduce their poster orally (3 minutes time, no slides are to be used and they will stand on the stage in the conference room). In the evening sessions, participants are given the opportunity to visit the posters in the conference room and approach the posters authors.

Poster Prize: the Scientific Committee will select the 3 best posters and award them with a prize of 300EUR, 200EUR and 100EUR respectively.

Poster session I – Monday 5 September

1	Aller	Isabel	Investigating the topology of different ER oxidoreductases using redox sensitive GFPs
2	Alon	Assaf	The Dynamic Disulfide Relay of Quiescin Sulfhydryl Oxidases
3	Angelucci	Francesco	Crystal structure of Schistosoma mansoni Peroxiredoxin I: insights into a general mechanism of assembly of the high molecular weight species
4	Arbach	Miriam	Diallyl polysulfide metabolites (from garlic) - Influence on the low molecular weight thiol redox status in microorganisms, and applications for agriculture
5	Arnér	Elias	The glutaredoxin domain of the human TrxR1 v3 splice variant is targeted to the plasma membrane by S-acylation at its N-terminal MGC motif and provokes membrane protrusions independently of oxidoreductase activity
6	Bachhawat	Anand	Glutathione degradation: Pathways and Assays
7	Bausewein	Daniela	Dual-targeted glutathione reductase 2 defines a bottleneck for reduction of glutathione disulfide only in plastids
8	Belli	Gemma	Functional analyses of plant monothiol glutaredoxins through their expression in Sacharomyces cerevisiae.
9	Berndt	Carsten	The role of dithiol Glutaredoxins during embryonic development and differentiation
10	Botello-Morte	Laura	Cysteine residues are directly involved in oligomerization and biological function of the global transcriptional regulator FurA from Anabaena sp. PCC 7120
11	Cao	Zhenbo	Structural and biochemical characterization of human peroxiredoxin IV
12	Cejudo	Francisco Javier	A mechanism to integrate redox signals in plants based on the biochemical properties of NADPH Thioredoxin Reductase C (NTRC)

13	Chatzi	Afroditi	Uncoupling folding from import in the oxidative folding pathway in mitochondria
14	Cho	Seung-Hyun	Crystal Structure of the Outer Membrane Protein RcsF, a New Substrate for the Periplasmic Protein-disulfide Isomerase DsbC
15	Clairborne	Al	Targeting bacillithiol biosynthesis and thiol-based redox homeostasis in Bacillus anthracis and Staphylococcus aureus
16	Cortopassi	Gino	Alterations in Thioredoxin-related antioxidants in Friedriech's ataxia animal and cell models and therapeutic screening
17	Danon	Avihai	A light-regulated oxidative sensor in the chloroplast
18	Day	Alison Michelle	Oxidative inactivation of the thioredoxin peroxidase activity of a peroxiredoxin is important for thioredoxin-mediated repair of oxidised proteins and cell survival
19	Delic	Marizela	Oxidative protein folding in the ER influences the redox state of different cellular compartments in the yeast Pichia pastoris
20	Deponte	Marcel	New Concepts of Glutathione-dependent Catalysis: Enzymatic Mechanism & Molecular Evolution of Glutaredoxins and Glyoxalases
21	Depuydt	Matthieu	Study of the overoxidized mitochondrial cysteines and their protection mechanisms
22	Dubreuil	Carole	The glutathione depletion in the Arabidopsis pad2 mutant associated to low glutamate-cysteine ligase content deregulates defense cellular events in response to biotic stress
23	Dziewulska	Aleksandra	Construction of the unmarked deletion of mrx genes in *Mycobacterium tuberculosis*
24	Ercolani	Luisa	Cellular redox imbalance and S-glutathionylation of target proteins contribute to promote premature senescence and cell death induced by oncogenic H-Ras
25	Fernandez Villadangos	Almudena	Arsenate reductases from Corynebacterium glutamicum,
26	Fernandez-Navarro	Julia	Chloroplast redox homeostasis is essential for root growth in Arabidopsis
27	Flanagan	Marc David	Regulation of ubiquitin and ubiquitin-like protein conjugation by reactive oxygen species in Schizosaccharomyces pombe.
28	Frendo	Pierre	(homo)glutathione Deficiency Impairs Root-knot Nematode Development in Medicago truncatula.
29	Furdui	Cristina	Isoform-specific Regulation of Akt by PDGF-induced Reactive Oxygen Species

30	Gabrielli Lopez	Natalia Paula	REGULATION OF IRON HOMEOSTASIS IN FISSION YEAST; CROSS-INDUCTION OF THE IRON DEPLETION REGULON BY OXIDATIVE STRESS
31	Gao	Xing-Huang	IMPLICATIONS OF AGING-DEPENDENT CHANGES IN HEART MITOCHONDRIAL GLUTAREDOXINS
32	Gasser	Brigitte	Overexpression of the redox transcription factor Yap1 modifies intracellular redox conditions and enhances recombinant protein secretion
33	Gennaris	Alexandra	The periplasmic oxidoreductase DsbG rescues single cysteine residues from oxidative, but not nitrosative stress
34	Górnicka	Agnieszka	Disulfide bond transfer in the intermembrane space of mitochondria: a novel Mia40 binding site for Erv1 plays a role in the ternary complex formation
Poster session II – Tuesday 6 September			
1	Gough	David	The role of Nox-generated ROS in regulating the Jak/STAT5 cell survival pathway.
2	Grammel	Hartmut	A role for glutathione in redox control of photosynthetic gene expression in Rhodospirillum rubrum
3	Gutsche	Nora	Analysis of ROXY activities in Arabidopsis flower development
4	Hashimoto	Shoko	Structural changes of protein disulfide isomerase by the binding of bisphenol
5	Hatori	Yuta	The redox status of copper secretion pathway and its implicated essential role in glutathione-depleted condition
6	Haynes	Alexina	Kinetic and Structural Analysis of Human Peroxiredoxin III (PrxIII), a Key Mitochondrial Antioxidant Enzyme
7	Hecker	Arnaud	Functional analysis of poplar Glutathione S transferases of the lambda class
8	Hezwani	Mohammed	THE BRANCHED CHAIN AMINOTRANSFERASE PROTEINS (hBCAT): NOVEL REDOX CHAPERONES IN PROTEIN FOLDING
9	Hochgräfe	Falko	Posttranslational protein modifications in host pathogen interactions
10	Hoffmann	Bastian	Structure/function analysis of the multidomain monothiol glutaredoxins of Saccharomyces cerevisiae
11	Huang	Meng-Er	Probing subcellular redox environments in yeast S. cerevisiae cells
12	Jortzik	Esther	Protein S-glutathionylation in malaria parasites
13	Kallergi	Emmanouela	Bimodal interaction of sulfhydryl oxidase Erv1 with Mia40 in yeast mitochondria

14	Keyes	Jeremiah	Modulation of lysophosphatidic acid-dependant proliferative and survival signals by localized thiol oxidation.
15	Klichko	Vladimir	The effect of peroxiredoxin IV on fly physiology is a complex interplay of antioxidant and signaling functions.
16	Koch	Johanna	Catalysis of oxidative folding by the mitochondrial thiol oxidase Mia40
17	Kojer	Kojer	The glutathione redox milieu of the IMS is controlled by the cytosol
18	Koenig	Nicolas	AtGrx S17 from A. thaliana: A monothiol Grx- and Trx-homology domain containing protein, linking the cellular redox state to
19	Kritsiligkou	Paraskevi	DsbD, a finely tuned thiol-disulfide oxidoreductase
20	Leroux	Alejandro	Analysis of the unique trypanothione redox metabolism under pseudo-physiological conditions
21	Lindahl	Anna Marika	Thiol-based redox modulation of SpkB – a cyanobacterial eukaryotic-type Serine/Threonine kinase required for oxidative stress tolerance in Synechocystis sp. PCC 6803
22	Lo Conte	Mauro	Use of Nitroso Compounds as Potential Selective Probes to Detect Sulfinic Acid Modification in Proteins.
23	Locy	Morgan	Thioredoxin Reductase Inhibition Induces Nrf2 Activation in Clara Cells
24	Lu	Hui	Redox regulation and biogenesis of mitochondrial intermembrane space proteins
25	Lu	Jun	Molecular reaction of cationic triphenylmethane dyes with active thiols in thioredoxin system
26	Manea	Adrian	Role of peroxisome proliferator-activated receptors in mediating 4-hydroxynonenal-induced up-regulation of NADPH oxidase expression and function in human aortic smooth muscle cells
27	Manea	Simona	Functional analysis of NADPH oxidase 5 promoter in human aortic smooth muscle cells: role of pro-inflammatory transcription factors
28	Martin	Rachel	Targeted Probes for Hydrogen Peroxide in the Endoplasmic Reticulum
29	Mavridou	Despoina	Oxidation-state-dependent protein-protein interactions in disulfide cascades
30	Mcdonagh	Brian	Relationships Between Thiol Redox Proteome, Mitochondrial Redoxins Prx1 and Grx2 and Iron Metabolism in Yeast.
31	Miranda-Vizuete	Antonio	The glutaredoxin system of Caenorhabditis elegans
32	Mohamed	Wael	Quiescin–Sulfhydryl Oxidase co-expression increases the activity of soluble mouse FIZZ1 using the wheat germ in vitro translation system

33	Molik	Sabine	Mitochondrial glutathione: uptake and function Sabine Molik, Roland Lill
34	Montano	Sergio	Disulfide substrates for highly sensitive fluorescent assays of thioredoxin, thioredoxin reductase and glutaredoxin.
Poster session III – Thursday 8 September			
1	Moores	Alexandra	Differential regulation of the type 1 fimbrial adhesin of Escherichia coli by reduced and oxidised glutathione
2	Morgan	Bruce	The Contribution of Intra-cellular Glutathione Transport to Maintenance of Cytosolic Glutathione Homeostasis
3	Mostertz	Jörg	Posttranslational protein modifications in host pathogen interactions
4	Nagy	Peter	Kinetic Model for the Peroxidase Activity of Peroxiredoxins
5	Nilewski	Sebastian	Complementation Studies to Identify Novel Thiol-Disulfide Oxidoreductases
6	Odnokoz	Elena	The studying of possible influence of reduced glutathione on regulation of apoptosis in neurons of cerebral cortex
7	Orumets	Kerti	Up-regulation of the genes encoding enzymes in the glutathione and cysteine biosynthesis pathways in a YAP1 over-expressing strain correlates to enhanced glutathione accumulation,
8	Pace	Paul	Hydrogen peroxide-dependent interaction of Peroxiredoxin 2 with ERp46
9	Pader	Irina	TRP14 – a potent thioredoxin reductase-dependent disulfide reductase and cellular target in cisplatin cytotoxicity
10	Padin-Irizarry	Vivian	Insights in oxidative stress in Plasmodium berghei
11	Paulo Mirasol	Esther	CHARACTERIZATION OF HIDROGEN PEROXIDE SENSORS IN FISSION YEAST: OXIDATIVE MODIFICATIONS OF Sty1 PATHWAY COMPONENTS
12	Pérez	Maria	Selenite stress and the protection role of dithiol glutaredoxins and Snf1 protein kinase in Saccharomyces cerevisiae
13	Peskin	Alexander	Hyperoxidation of human peroxiredoxin II
14	Pöther	Dierk-Christoph	Analyses of low molecular weight-thiols in different Stahphylococcus aureus-strains
15	Puigpinos Roig	Judit	Functional studies of the early secretory pathways glutaredoxins Grx6 and Grx7 of Saccharomyces cerevisiae

16	Radyuk	Svetlana	Age-dependent changes in the transcription profile of long-lived Drosophila over-expressing GCLc
17	Ramasamy	Shankar	Coordination and Binding properties of Glutathione with Transition metal cations (Cd2+Hg2+,and Zn2+)
18	Rey	Pascal	Arabidopsis thaliana plastidial methionine sulfoxide reductases B: regeneration mechanisms, identification of substrates and physiological roles.
19	Scheibe	Renate	Redox-dependent changes in cytosolic enzymes
20	Schmidt	Edward Eric	Glutathione is required for DNA replication in hepatocytes lacking thioredoxin reductase I
21	Serrano	Adelfa	Insights in the glutathione pathway in Plasmodium berghei
22	Singh	Amit	The intracellular redox sensor WhiB3 controls secretion of virulence factors in Mycobacterium tuberculosis.
23	Strauss	Erick	Inhibitors of *Staphylococcus aureus* the Coenzyme A disulfide reductase
24	Teixeira	Filipa	Unraveling the mitochondrial redox metabolism of Leishmania infantum.
25	Trost	Paolo	The redox switch CP12 undergoes a disorder-to-order transition upon binding to its structured partner GAPDH
26	Truong	Thu Ha	Isotope-coded chemical reporter and acid-cleavable affinity reagents for monitoring protein sulfenic acids
27	Tumane	Rajani	Assessment of Copper toxicity in occupationally exposed copper mine workers
28	Uzarska	Marta Agata	Mitochondrial monothiol glutaredoxin 5 specifically interacts with Hsp70 chaperone Ssq1.
29	Van Laer	Koen	The mycoredoxin-1 defense mechanism against oxidative stress in Mycobacterium tuberculosis
30	Waszczak	Cezary	REVERSED GENETIC SCREENS TO IDENTIFY ROS SIGNAL TRANSDUCERS IN ARABIDOPSIS THALIANA
31	Weckbecker	Daniel	Atp23 – An unconventional substrate of the Mia40 import pathway
32	Zaffagnini	Mirko	Glutaredoxin S12: unique properties for redox signaling
33	Zaman	Aubhishek	Gamma-glutamyl Cysteine Synthetase (GCS) sequence varies significantly between plants and animals.
34	Zhang	Xu	Disruption of Mitochondrial Thioredoxin System as a cell death Mechanism of Cationic Triphenylmethanes

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