ESGLD 2017

European Study Group on Lysosomal Diseases

21ST ESGLD WORKSHOP AND GRADUATE COURSE

ECULLY (LYON), FRANCE

September 13th - 17th 2017

WELCOME TO THE ESGLD 2017 WORKSHOP

Valpré

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Ecully (Lyon), France

European Study Group on Lysosomal Diseases ESGLD

Chairman
Brian Bigger
Stem Cell & Neurotherapies
Division of Cell Matrix Biology and
Regenerative Medicine
3.721 Stopford Building
Oxford Road
University of Manchester
Manchester M13 9PT
UK

Secretary
Martin Hrebicek
Institute of Inherited Metabolic
Disorders
Ke Karlovu 2
120 00 Praha 2
Czech Republic

Treasurer
Carla E. Hollak
Department of Internal Medicine
Academic Medical Centre
Meibergdreef 15
1105 AZ Amsterdam
The Netherlands

Members :
Andrea Ballabio (Naples)
Catherine Caillaud (Paris)
Eeva-Liisa Eskelinen (Helsinki)
Mia Horowitz (Tel Aviv)
Paul Saftig (Kiel)

21st ESGLD WORKSHOP (2017)

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Andrea Ballabio (Naples)
Brian Bigger (Manchester)
Bruno Gasnier (Paris)
Volkmar Gieselmann (Bonn)
Paul Saftig (Kiel)
Angela Schulz (Hamburg)

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Short Course on Lysosomes and Lysosomal Diseases

For Graduate Students and Young PostDocs

Wednesday, September 13th

Basic Aspects of Lysosomal Biology

14:00 **Introductory remarks**
Bruno Gasnier and Marie T Vanier

14:15 – 15:00 **Thomas Braulke**
(Universitätsklinikum Hamburg-Eppendorf, Germany)
Biogenesis of lysosomes

15:00 – 15:45 **Carmine Settembre**
(Telethon Institute of Genetics and Medicine, Pozzuoli, Italy)
Autophagy and lysosomal adaptation

15:45 – 16:15 ***Coffee Break***

16:15 – 17:00 **Paul Saftig**
(Kiel University, Germany)
Lysosomal membrane proteins

17:00 – 17:45 **Bruno Gasnier**
(Paris Descartes University, France)
Lysosomal channels and transporters

17:45-18:15 **Designation of flash-talk discussion leaders**

19:30 **Dinner**

Short Course on Lysosomes and Lysosomal Diseases, continued..

Thursday, September 14th morning

Translational and Clinical Aspects

8:45 – 9:30 **Timothy Cox**
(University of Cambridge, UK)
Lipid degradation and lipid storage diseases

9:30 – 10:15 **Marie T. Vanier**
(Inserm, Lyon, France)
Niemann Pick C disease

10:15 – 10:45 ***Coffee Break***

10:45 – 11:30 **Angela Schulz**
(Universitätsklinikum Hamburg-Eppendorf, Germany)
Pathology and treatment of neuronal ceroid lipofuscinoses

11:30 – 12:15 **Brian Bigger**
(University of Manchester, UK)
Therapy of lysosomal storage diseases

12:30 – 14:00 **Lunch**

Thursday, September 14th, afternoon

Flash Talks from Graduate Students and Postdocs

14:00-16:30 3-min max. 3-slide talks by trainees to present their research or clinical study

16:30-16:45 Flash talk 'awards'

21st ESGLD WORKSHOP

Ecully (Lyon), France

14-17 September, 2017

Scientific Programme

Thursday, September 14th

18-15 **Opening – Welcome address**

18.30 – 19.30 **Keynote lecture 1** – introduced by **Jérôme Ausseil** (Amiens)

Marc Tardieu (Université Paris-Sud) – ***Gene therapy in lysosomal diseases: the example of Mucopolysaccharidosis type IIIB***

19.30 **Get-together and Dinner**

Friday, September 15th

8.30 – 11.40 Session 1: Molecular/cellular and pharmacological studies

Discussion leaders: **Jérôme Ausseil** (Amiens) and **Thomas Braulke** (Hamburg)
(15-min talks + 5-min questions)

8:30 **O-1**	**Pshezhetsky A** Montreal	Inhibitors of lysosomal neuraminidases 1 and 3 as potential candidates for treating atherosclerosis
8:50 **O-2**	**Matzner U** Bonn	Genetically engineered arylsulfatase A with increased catalytic rate for enzyme-based therapies of metachromatic leukodystrophy
9:10 **O-3**	**Anne C** Paris	Structure-based designed inhibitors of sialin as potential scaffolds for pharmacological chaperone treatment of Salla disease
9:30 **O-4**	**Pan X** Montreal	Chaperone therapy for mucopolysaccharidosis type IIIC
9:50	***Coffee Break***	
10:20 **O-5**	**Boonen M** Namur	Spastic paraplegia 21: a lysosomal disease?
10:40 **O-6**	**van der Lienden MJC** Leiden	HEPES drives a MiT/TFE-mediated lysosomal-autophagic gene network in cultured cells: a call for caution
11:00 **O-7**	**Winter D** Bonn	Mass spectrometry based targeted quantification of the lysosomal proteome by stable isotope labeled concatenated proteins
11:20 **O-8**	**Snanoudj-Verber S** Chapel Hill, Paris	AAV9-based gene therapy restores enzymatic activity in a mouse model for aspartylglucosaminuria

11:40 – 12:30 **ESGLD General Assembly** **(for ESGLD members only)**

Friday, September 15th, continued…

12.30 – 14.00 **Lunch**

14.00 – 17.30 **Networking**

18.00 – 19.40 **Session 2: Lysosomal channels and transporters**

Discussion leader: **Paul Saftig** (Kiel)
(15-min talks + 5-min questions)

18:00	**Lloyd-Evans E**		The Batten disease protein CLN3 is a lysosomal ion
O-9		Cardiff	channel that regulates lysosomal response to swelling
18:20	**Waller-Evans H**		Inhibition of NAADP mediated lysosomal Ca^{2+} signalling
O-10		Cardiff	induces Niemann-Pick type C phenotypes in cells and animal models
18:40	**Froese DS**		Mutations in ABCD4 disrupt interaction between the
O-11		Zurich	lysosomal proteins ABCD4 and LMBD1 involved in vitamin B12-trafficking
19:00	**Terres Y**		Synthetic lethality between two lysosomal amino acid
O-12		Paris	transporters
19:20	**Buttgereit A**		Knock-in mouse reveals importance of slow gating of
O-13		Berlin	lysosomal H+/Cl- exchange in lysosomal function and bone resorption

19:40 End of Session

20.00 **Dinner**

…/…

Saturday September 16th

8.30 – 12.30 Session 3: Pathophysiology and disease models

Discussion leaders: **Volkmar Gieselmann** (Bonn) and **Carmine Settembre** (Naples)
(15-min talks + 5-min questions)

8:30 **O-14**	**Raimundo N** Göttingen	Lysosomal malfunction impairs mitochondria via a transcriptional mechanism
8:50 **O-15**	**Monfregola J** Naples	Generation of a lysosomal storage disorder CRISPr biobank for the study of lysosomal storage disorders
9:10 **O-16**	**Linhorst A** Bielefeld	The lysosomal hydrolase Plbd2 – From knockout to functional role
9:30 **O-17**	**Trabszo C** Bielefeld	Arylsulfatase K (ARSK) – The missing link in glycosaminoglycan degradation. Arsk-knockout mouse characterization
9:50 **O-18**	**Di Lorenzo G** Hamburg	Role of the gamma-subunit of GlcNAc-1-phosphotransferase in the pathogenesis of mucolipidosis type III
10:10	***Coffee break***	
10:50 **O-19**	**Cabasso O** Tel-Aviv	The fruit fly drosophila melanogaster as a model system to study Gaucher disease
11:10 **O-20**	**Maor G** Tel-Aviv	The contribution of mutant glucocerebrosidase to the aggregation of alpha synuclein
11:30 **O-21**	**Schaaf GJ** Rotterdam	Progressive lysosomal dysfunctioning inactivates muscle stem cells and blocks muscle regeneration in Pompe disease
11:50 **O-22**	**Parker H** Manchester	Mucopolysaccharidosis IIIA storage substrate drives an innate immune neuro-inflammatory response
12:10 **O-23**	**Settembre C** Naples	mTORC1 hyperactivation arrests bone growth in lysosomal storage disorders
12:30	End of Session	

12.30 – 14.00 **Lunch**
(meeting of the ESGLD board, and lunch, in a dedicated room)

Saturday September 16th continued…

14.00 – 16.20 Session 4: Diagnostics and clinical studies

Discussion leaders: **Thierry Levade** (Toulouse) and **Angela Schulz** (Hamburg)
(15-min talks + 5-min questions)

14:00 **O-24**	**Pettazzoni M** Lyon	Multiplex LC-MS/MS lysosphingolipids analysis in plasma for the screening of sphingolipidoses and Niemann-Pick disease type C
14:20 **O-25**	**Ferraz MJ** Leiden	Glycosphingoid bases (lyso-glycosphingolipids) in lysosomal storage disorders
14:40 **O-26**	**Zhang K** Cambridge MA	Evaluation of glucosylsphingosine as a biomarker of the Eliglustat treatment -response in patients with Gaucher disease Type 1 (GD1)
15:00	***Coffee Break***	
15:20 **O-27**	**Tebani A** Rouen	Urinary metabolomics and data modeling unveil mucopolysaccharidosis type I metabolic impairments
15:40 **O-28**	**Arends M** Amsterdam	Retrospective study of long-term outcomes of enzyme replacement therapy in Fabry disease: analysis of prognostic factors
16:00 **O-29**	**Morand O** Allschwill	Lucerastat, an iminosugar for substrate reduction therapy: safety, tolerability, PD and PK in adult subjects with Fabry disease

16:20 End of session

16:20 -18:00 Attended Poster Session

18:15 – 19:15 Keynote lecture 2 – introduced by **Bruno Gasnier** (Paris)

Haoxing Xu (University of Michigan) – ***Ion channels in the lysosome: opening the gate to the cell's recycling center***

20:00 **ESGLD dinner**

Sunday September 17th

8.30 – 12.20 Session 5: Gene and cell therapy approaches

Discussion leaders: **Catherine Caillaud** (Paris) and **Brian Bigger** (Manchester)
(15-min talks + 5-min questions)

8:30 **O-30**	**Bigger BW** Manchester	A BBB crossing peptide with lentiviral-mediated stem cell gene therapy fully corrects Mucopolysaccharidosis II
8:50 **O-31**	**Ferla R** Naples	Combination of gene and enzyme replacement therapies for mucopolysaccharidosis type VI
9:10 **O-32**	**Rouvière L** Paris	AAV9 gene transfer in Sandhoff mice: correction of brain and cerebellum using a combined way of administration
9:30 **O-33**	**O'Leary C** Manchester	Correction of neurological manifestations of MPSIIIC by a novel rationally designed neurotropic AAV gene therapy vector
9:50 **O-34**	**Peruzzo P** Udine	RNA based therapies for glycogenosis type II due to the common c.-32-13T>G mutation
10:10	***Coffee Break***	
10:40 **O-35**	**Azario I** Monza	Neonatal umbilical cord blood transplantation halts disease progression in the murine model of MPS-I
11:00 **O-36**	**Liao A** Manchester	Non-depleting anti-CD4 monoclonal antibody induces immune tolerance to enzyme replacement therapy in a mucopolysaccharidosis type I mouse model
11:20 **O-37**	**Pijnappel P** Rotterdam	Immune Tolerance Induction by Lentiviral Stem Cell Gene Therapy in Pompe Disease
11:40 **O-38**	**Mitchell NL** Christchurch	AAV gene transfer halts disease progression in clinically affected sheep with CLN5 Batten disease
12:00 **O-39**	**Mole SE** London	BATCure: An H2020 Consortium developing new therapies for Batten disease
12:20		**Closing remarks**
12:35		**Young investigator's award**
13:00		**Lunch-box and departure**

POSTER SESSION (by alphabetic order of first author)

First Author	Presenter	Poster #	Title
Alshehri AS	Alshehri AS	**P-1**	Simple fluorimetric test for lysosomal swelling as a means to identify, monitor and develop therapies for all lysosomal storage diseases
Arash-Kaps L	Hennermann JB	**P-2**	The broad clinical variability of GM1 gangliosidosis
Badell-Grau RA	Badell-Grau RA	**P-3**	Characterising the fundamental cell biology of CLN8 disease for the purpose of drug screening and development
Benetó N	Benetó N	**P-4**	*EXTL2* as a target for substrate reduction therapy in iPSC-derived neurons from Sanfilippo C patients
Boer D	Boer D	**P-5**	Activity of lysosomal glucocerebrosidase towards xylosides
Calcagnì A	Calcagnì A	**P-6**	A cellular model of Neuronal Ceroid-Lipofuscinosis type 3 created by CRISPR-Cas9 provides new insights into disease pathogenesis
Carpenter K	Priestman DA	**P-7**	Circulating glycosphingolipids in patients with GM2 gangliosidosis
Castillo O	Coll MJ	**P-8**	Identification of disorders of glycoprotein degradation and other related diseases using a new HPLC method
Ciana G	Ciana G	**P-9**	Effects of high-oral ambroxol chaperone therapy in two Italian patients with type 3 Gaucher disease
Ciana G	Ciana G	**P-10**	Very long-term bone mineral density response in a cohort of Gaucher patients treated with ERT from childhood to adulthood

Coutinho MF	Coutinho MF	**P-11**	Genetically modulated Substrate Reduction Therapy for Mucopolysaccharidoses – in vitro studies
Dardis A	Dardis A	**P-12**	Niemann Pick type C in Italy: an update of molecular and biochemical data
Darwiche W	Darwiche W	**P-13**	Among accumulated Heparan sulfate oligosaccharides, hexasaccharides are the most pathogenic fractions involved in glia activation in Sanfilippo syndrome
Dubot P	Dubot P	**P-14**	Early hematopoietic stem cell transplantation in a MPS type VII boy
Dubot P	Dubot P	**P-15**	Is acid glucosylceramidase a player in the development of cutaneous melanoma?
Ferri L	Ferri L	**P-16**	Newborn screening for Fabry disease in the Italian regions of Tuscany and Umbria: current overview
Hřebíček M	Hřebíček M	**P-17**	Strategies compared: diagnostic next generation sequencing (NGS) and biochemical markers of NPC in at risk populations
Kaade E	Kaade E	**P-18**	Investigation of the lysosomal proteome in different nutrient conditions
Korolenko TA	Korolenko TA	**P-19**	Chitotriosidase activity and expression in mice with lipid storage syndrome treated by macrophage stimulator
Kytidou K	Kytidou K	**P-20**	Activity-based labeling and detection of active lysosomal glycosidases: application in diagnostic screening of urine samples
Matos S	Alves S	**P-21**	Development of an antisense-mediated exon skipping approach as a therapeutic option for the ML II-causing mutation c.3503_3504delTC

Mauhin W		**P-22**	Anti-agalsidase antibodies associated with renal transplantation in Fabry disease
Monaco A	Monaco A	**P-23**	Treating neuronal proteostasis in lysosomal storage diseases
Nelvagal HR	Nelvagal HR	**P-24**	Early onset gait abnormalities and spinal cord pathology in a mouse model of CLN1 Disease
Paciotti S	Beccari T	**P-25**	CSF lysosomal enzymes activity and GBA1 genotyping in Parkinson's disease
Palmer DN	Palmer DN	**P-26**	Cross–regulation of *CLN5* and *CLN6* gene expression in ovine Batten disease models
Pettazzoni M	Pettazzoni M	**P-27**	Plasmatic biomarkers for the screening of Niemann-Pick type C disease: experience in a clinical setting in France
Pupyshev AB	Pupyshev AB	**P-28**	Suppressed autophagy in a mouse model of neurodegeneration and autophagy stimulation in brain by rapamycin and trehalose
Rigon L	Rigon L	**P-29**	Glycosaminoglycan profile in the Mucopolysaccharidosis type II mouse model at baseline and after 6 weeks treatment with ERT
Rodriguez CE	Rodriguez CE	**P-30**	Enzymatic method for the determination of the non-lysosomal glucosylceramidase
Rudnik S	Rudnik S	**P-31**	Characterisation of the phosphatidylinositol(4,5)bisphosphate 4-phosphatase TMEM55A and TMEM55B
Ruiz-Andres C	Gort L	**P-32**	Lysosomal acid lipase deficiency in 23 Spanish patients: High frequency of the novel c.966+2T>G mutation in Wolman disease

Russell KN	Russell KN	**P-33**	Longitudinal *in vivo* monitoring of disease progression and viral mediated gene injection therapy in ovine Batten disease
Rybova V	Asfaw B	**P-34**	Model of CNS involvement for mucopolysaccharidosis type II: neural cells from induced pluripotent stem cells of a patient
Sechi A	Bembi B	**P-35**	Successful desensitization to enzyme replacement therapy by using omalizumab in a patient with late-onset Pompe disease
Sudrié-Arnaud B	Sudrié-Arnaud B	**P-36**	Metabolic causes of non immune hydrops fetalis: next generation sequencing panel as first line investigation
Sudrié-Arnaud B	Sudrié-Arnaud B	**P-37**	Next generation sequencing strategy for lysosomal storage diseases diagnosis
Tomanin R	Tomanin R	**P-38**	Mucopolysaccharidosis type VI (MPS VI) and molecular analysis: A review of published classified variants in the *ARSB* gene
Van der Wal E	Bergsma AJ	**P-39**	Antisense based correction of *GAA* splicing in iPSC-derived skeletal muscle cells from Pompe patients that carry the IVS1 variant
Waller-Evans H	Waller-Evans H	**P-40**	Lysosomal dysfunction in Smith-Lemli-Opitz syndrome caused by inhibition of the NPC1 protein can be corrected using some NPC therapies
Zanetti A	Tomanin R	**P-41**	A targeted sequencing panel for the analysis of exons and conserved intronic sequences of 50 LSD genes
Zech I	Gieselmann V	**P-42**	Developing substrate reduction therapy for metachromatic leukodystrophy