

Hedgehog Signaling: From Developmental Biology to Anti-Cancer Drugs

Saint Jean Cap-Ferrat, France
March 27-31, 2010

PROGRAMME

Saturday, March 27th

12:00-14:50 **ARRIVAL AND REGISTRATION**

14:50-16:45 **Session 1: Secretion and Movement**

Chairpersons: Suzanne Eaton, Satyajit Mayor

14:50-15:00 Welcome Address

15:00-15:30 **P. Théron**, IBDC, Nice, France

Regulation of the Hedgehog long range activity in Drosophila.

15:30-16:00 **S. Eaton**, Max Planck Institute, Dresden, Germany

Really long-range Hedgehog signaling.

16:00-16:30 **H. Roelink**, University of California, Berkeley, USA

Long-range transport of SHh.

16:30-16:45 **B. Glise**, CBD, Université Paul-Sabatier, Toulouse, France

**Role of the HSPG modifying enzyme, DSulf1, in modulating
Hedgehog morphogen gradient.**

16:45-17:30 **COFFEE BREAK**

17:30-19:00 **Session 1: Continued**

17:30-18:00 **I. Guerrero**, Univ. Autonoma de Madrid, Madrid, Spain

**Cytoskeleton-mediated transport of exovesicles containing
Hedgehog in the Drosophila wing disc.**

18:00-18:30 **S. Mayor**, Tata Institute, Bangalore, India

Hierarchical organization of Hh and its role in signaling.

18:30-19:00 **T. Kornberg**, UCSF, San Francisco, USA

Mechanisms of morphogen dispersion and signal transduction.

19:30 **DINNER**

COCKTAILS AND SOCIAL EVENT

Sunday, March 28th

9:00-10:30	Session 2: Ligand reception and signal transduction I
	Chairpersons: Philip Beachy, Patrick Mehlen
9:00-9:30	P. A. Beachy , Stanford University, Palo Alto, USA
9:30-10:00	J. Jiang , UT Southwestern Medical Center, Dallas, USA Kinase regulation of Smoothened signaling.
10:00-10:15	B. Allen , University of Michigan, Ann Arbor, USA Essential and opposing roles for cell surface Hh-binding proteins during mouse embryogenesis.
10:15-10:30	C. Siebold , University of Oxford, Oxford, United Kingdom Structural mechanism of hedgehog ligand sequestration by the human hedgehog-interacting protein Hip.
10:30-11:15	COFFEE BREAK
11:15-12:45	Session 2: continued
11:15-11:45	P. Mehlen , Centre Léon Bérard, Lyon, France SHH and the dependence receptor notion.
11:45-12:15	A. Plessis , Jacques Monod Institute, Paris, France Dynamics and homeostasis of the Hedgehog receptor Patched: Regulation by E3 Ubiquitin ligases
12:15-12:30	A. Casali , IBMB-CSIC, Barcelona, Spain Self-induced Patched receptor degradation adjusts cell sensitivity to the Hedgehog morphogen gradient.
12:30-12:45	D. Leahy , Johns Hopkins University School of Medicine, Baltimore, USA Structure of the N-terminal protein domain of Dally-like protein.
12:45-14:00	LUNCH
14:00-16:00	FREE TIME

16:00-17:00	Session 3: Ligand reception and signal transduction II
	Chairpersons: Henk Roelink, Elisa Marti
16:00-16:30	X. Lin , Cincinnati Children's Hospital Cincinnati, USA Two cell-surface proteins Dally-like and Ihog differentially regulate Hh signalling strength and range during development.
16:30-16:45	K. Ayers, IDBC, Nice, France The glypican Dally and the hydrolase Notum regulate the switch between high and low level intracellular Hedgehog pathway signalling.
16:45-17:00	J. Filmus, Sunnybrook Research Institute, Toronto, Canada Glypican-5 stimulates rhabdomyosarcoma cell proliferation by activating hedgehog signaling.
17:00-17:45	COFFEE BREAK
17:45-19:00	Session 3: Continued
17:45-18:15	D. J. Robbins , University of Miami, Miami, USA Models of Hedgehog signaling.
18:15-18:30	B. Wang, Weill Cornell Medical College, New York, USA Suppressor of fused and SPOP regulate the stability and function of Gli2 and Gli3 full-length activators but not their repressors.
18:30-18:45	M.A. Price, Okinawa Institute of Science and Technology, Okinawa, Japan The mechanism of Ci repressor formation.
18:45-19:00	K. Nybakken, Boston Biomedical Research Inst., Boston, USA Regulation of Hh signaling by acetylation.
19:30	DINNER
21:00	POSTER SESSION I All Numbers

Monday, March 29th

8:45-10:15 **Session 4: Hedgehog Signaling in Development I**

Chairpersons: Philip Ingham, Muriel Perron

8:45-9:15

J. Briscoe, NIMR, London, UK

The gene regulatory logic for reading the sonic Hedgehog gradient in the vertebrate neural tube.

9:15-9:45

P. W. Ingham, IMCB, Singapore

Cell fate specification in the zebrafish myotome: a paradigm for Hedgehog signalling activity.

9:45-10:15

A. P. McMahon, Harvard University, Cambridge, USA

Exploring the regulatory network underlying HH-generated neural diversity.

10:15-11:00 **COFFEE BREAK**

11:00-12:15 **Session 4: Continued**

11:00-11:30

C. Tickle, University of Dundee, UK

Hedgehog signalling in vertebrate limb development.

11:30-12:00

E. Marti, CSIC, Barcelona, Spain

Patterning and proliferation of neural progenitors cells requires integration of Wnt and Sonic hedgehog activities.

12:00-12:15

C. Chiang, Vanderbilt University, Nashville, USA

Transventricular delivery of Sonic hedgehog is essential to cerebellar ventricular zone development.

12:15-13:45 **LUNCH**

13:45-16:30 **OUTING: Villa Ephrussi de Rothschild museum and gardens**

16:30-17:00 **COFFEE BREAK**

17:00-18:00 Session 5: Hedgehog Signaling in Development II

Chairpersons: James Briscoe, Cheryll Tickle

17:00-17:30 **F. Charron**, IRCM, Montréal, Canada
Wiring the brain: Hedgehog signaling and neural circuit formation.

17:30-18:00 **M. Perron**, Université Paris XI, Orsay, France
Control of post-embryonic neurogenesis in the retina by a balance between Hedgehog and Wnt signaling pathways.

18:00-20:00 POSTER SESSION II Odd Numbers

20:00 DINNER

Tuesday, March 30th

8:45-10:15 Session 6: Hedgehog and Primary Cilia

Chairpersons: Alexandra Joyner, Jeremy Reiter

8:45-9:15 **K. Anderson**, Sloan-Kettering Institute, Cambridge, USA
Cilia and Hedgehog signaling in the mouse embryo.

9:15-9:45 **P.-T. Chuang**, UCSF, San Francisco, USA
Cilium-dependent and -independent processes in mammalian Hedgehog signaling.

9:45-10:00 L. Milenkovic, Stanford University, Palo Alto, USA
Tracing Smoothened to the primary cilium.

10:00-10:15 M. Bijlsma, University of California, Berkeley, USA
Ciliary function is not required for non-canonical Hedgehog signal transduction.

10:15-11:00 COFFEE BREAK

11:00-12:00 Session 6: Continued

11:00-11:30 **J. Reiter**, UCSF, San Francisco, USA
Primary cilia can both mediate and suppress Hedgehog pathway-dependent tumorigenesis.

11:30-11:45 J. Eggenschweiler, Princeton University, Princeton, USA
Broad-minded links ciliary assembly, cell cycle-related kinase function, and mammalian Hedgehog signaling.

	11:45-12:00	S. Schneider-Maunoury, CNRS UMR7622, Paris, France Disruption of the ciliary gene Ftm/Rpgrip1l causes telencephalic patterning and morphogenesis defects by preventing the formation of Gli3R.
12:00-14:00	LUNCH	
14:00-15:00	FREE TIME	
15:00-16:15	Session 7: Hedgehog in Cancer and Cancer Stem Cells I Brain Tumorigenesis	
	Chairpersons: Kathryn Anderson, Rune Toftgård	
	15:00-15:30	A. Gulino , University La Sapienza, Rome, Italy Regulation of Hedgehog/Gli function in cerebellar stem/progenitor and medulloblastoma cells.
	15:30-16:00	A. Ruiz i Altaba , University of Geneva, Geneva, Switzerland The GLI code in cancer stem cells.
	16:00-16:15	A. Kenney, MSKCC, New York, USA Sonic Hedgehog: Hippo pathway cross-talk in neural precursor proliferation and pediatric brain tumorigenesis.
16:15-16:45	COFFEE BREAK	
16:45-18:15	Session 7: Continued	
	16:45-17:15	A. L. Joyner , Sloan-Kettering Cancer Center, New York, USA Gli1 as a tool to study skin homeostasis, wound repair, and cancer.
	17:15-17:45	M. P. Scott , Stanford University, Palo Alto, USA Target gene regulation by Gli1.
	17:45-18:15	F. Aberger , University of Salzburg, Salzburg, Austria Cooperative Hedgehog/GLI signaling in cancer.
18:15-20:15	POSTER SESSION III Even Numbers	
20:30	DINNER	

Wednesday, March 31st

8:45-10:15 **Session 8: Hedgehog in Cancer and Cancer Stem Cells II** **Skin and other tumors**

Chairpersons: Alberto Gulino, Ariel Ruiz I Altaba

- 8:45-9:15 **R. Toftgård**, Karolinska Institute, Huddinge, Sweden
Hedgehog signalling in skin and pancreatic cancer.
- 9:15-9:45 **A. Oro**, Stanford University, Palo Alto, USA
Dermal requirements for sonic Hedgehog signaling during hair follicle morphogenesis.
- 9:45-10:00 **B. Stecca**, Istituto Toscano Tumori, Florence, Italy
Hedgehog-GLI signaling is essential for melanoma stem cell survival.
- 10:00-10:15 **J. Sage**, Stanford, Palo Alto, USA
Cell-autonomous role for Hedgehog signaling in small cell lung carcinoma.

10:15-11:00 **COFFEE BREAK**

11:00-12:15 **Session 9: Hedgehog in Cancer and Cancer Stem Cells III - Clinical Trials**

Chairpersons: Frederic de Sauvage, Isabel Guerrero

- 11:00-11:30 **F. de Sauvage**, Genentech Inc, San Francisco, USA
Targeting the Hedgehog pathway in cancer.
- 11:30-11:45 **K. McGovern**, Infinity Pharmaceuticals, Cambridge, USA
Activity of a Smoothed inhibitor, IPI-926, in ligand-dependent and ligand-independent tumors.
- 11:45-12:00 **K. Bennett**, Bristol-Myers Squibb, Lawrenceville, USA
Characterization of BMS-833923 (XL139), a Hedgehog (HH) pathway inhibitor in early clinical development.
- 12:00-12:15 **S. Buonamici**, Novartis, Cambridge, USA
Resistance to smoothed antagonists can be abrogated by PI3K pathway inhibition.

12:30 **END OF THE MEETING**

12:30-14:00 **LUNCH AND DEPARTURE**