

CURRICULUM VITAE

PERSONAL INFORMATIONS

Name Sandra Cottet
Professional Address IRO - Institut de Recherche en Ophtalmologie
Av Grand-Champsec 64, 1950 Sion, Suisse

Function Group leader

Tel. +41 27 205 79 06
Fax : +41 27 205 79 01
E-mail : sandra.cottet@irovision.ch
Web page <http://www.irovision.ch>

Education:

1995-1999	PhD in Molecular and Cellular Biology	University of Lausanne, Switzerland
1993-1994	Master degree in Biology	Institute of Animal Biology, University of Lausanne
1989-1993	Bachelor degree in Sciences	University of Lausanne

Professional experience

2007-	Group leader, Institute for Research in Ophthalmology (IRO), Sion, Switzerland
2004- 2007	Senior scientist, Institute for Research in Ophthalmology (IRO), Sion, Switzerland (Dir. Prof. D. Schorderet)
2003-2004	R&D Project leader at BELAIR Biotechnology – Scientific Park, Swiss Federal Institute of Technology (EPFL), Switzerland (Dir. E. Luye)
1999-2003	Postdoctoral research fellow at the Institute of Pharmacology and Toxicology, University of Lausanne, Switzerland (Prof. B. Thorens)
1995-1999	PhD student at the Institute of Animal Biology and the Institute of Cancer Experimental Research, University of Lausanne, Switzerland (Dr. B. Corthésy)
1993-1994	Teaching assistant - Master student, teaching, for undergraduate students in Biology, Chemistry, Medicine and Pharmacy, Institute of Animal Biology, University of Lausanne, Switzerland (Dr. B. Corthésy)

Domains of competence

Retinal biology, retinal degeneration, cellular and molecular biology, signal transduction, cell death pathways, gene regulation, heterologous expression systems

Publications

1. Hamann S., Métrailler S, Schorderet DF and **Cottet S.** (*In Press* in PLoS ONE)
Analysis of the cytoprotective role of α -crystallins in cell survival and implication of the α A-crystallin C-terminal extension domain in preventing Bax-induced apoptosis
2. Métrailler S, Schorderet DF and **Cottet S.** (2012)
Early apoptosis of rod photoreceptors in *Rpe65^{-/-}* mice is associated with the upregulated expression of lysosomal-mediated autophagic genes. **Experimental Eye Research** 96: 70-81
3. Escher P., Schorderet DF. and **Cottet S.** (2011)

- Altered expression of the transcription factor Mef2c during retinal degeneration in *Rpe65*^{-/-} mice. **Investigative Ophthalmology & Visual Science** 52: 5933-5940
4. Le Carré J, Schorderet DF and **Cottet S.** (2011)
Altered expression of β -galactosidase-1-like protein 3 (*Glb1l3*) in *Rpe65*^{-/-} mouse model of Leber's congenital amaurosis. **Molecular Vision** 17: 1287-1297
 5. Hamann S., Schorderet DF. and **Cottet S.** (2009)
Bax-induced Apoptosis in Leber's Congenital Amaurosis: A Dual Role in Rod and Cone Degeneration. **PLoS ONE** 4(8): e6616
 6. **Cottet S.** and Schorderet DF. (2009)
Mechanisms of apoptosis in Retinitis Pigmentosa. **Current Molecular Medicine** 9:375-383
 7. Escher P., **Cottet S.**, Aono S., Oohira A. and Schorderet DF. (2008)
Differential neuroglycan C expression during retinal degeneration in *Rpe65*^{-/-} mice. **Molecular Vision** 14: 2126-35
 8. **Cottet S.** and Schorderet DF. (2008)
Triggering of Bcl-2-related pathway is associated with apoptosis of photoreceptors in *Rpe65*^{-/-} mouse model of Leber's Congenital Amaurosis. **Apoptosis** 13: 329-42
 9. Schorderet DF., **Cottet S.**, Lobrinus JA., Borruat FX., Balmer A., and Munier FL. (2007)
Retinopathy in Danon disease. **Archives of Ophthalmology** 125: 231-6
 10. **Cottet S.**, Michaut L., Boisset G., Schlecht U., Gehring W., and Schorderet DF. (2006)
Biological characterization of gene response in *Rpe65*^{-/-} mouse model of Leber's congenital amaurosis during progression of the disease. **FASEB Journal** 20: 2036-49.
 11. Cattan P., Rottembourg D., **Cottet S.**, Tardivel I., Dupraz P., Thorens B., Boitard C., and Carel J.C. (2003)
Destruction of conditional insulinoma cell lines in NOD mice: a role for autoimmunity. **Diabetologia** 46: 504-10.
 12. **Cottet S.**, Corthésy-Theulaz I., Spertini F., and Corthésy B. (2002)
Microaerophilic conditions permit to mimic *in vitro* events occurring during *in vivo Helicobacter pylori* infection and to identify Rho/Ras-associated proteins in cellular signaling. **Journal of Biological Chemistry** 277: 33978-86.
 13. **Cottet S.**, Dupraz P., Hamburger F., Dolci W., Jaquet M., and Thorens B. (2002)
cFLIP protein prevents tumor necrosis factor- α -mediated induction of caspase-8-dependent apoptosis in insulin-secreting β Tc-Tet cells. **Diabetes** 51: 1805-14.
 14. Thorens B., Dupraz P., and **Cottet S.** (2001)
Engineering tolerance into transplanted beta cell lines. **Annals of the New York Academy of Sciences** 944: 267-70.
 15. **Cottet S.**, Dupraz P., Hamburger F., Dolci W., Jaquet M., and Thorens B. (2001)
SOCS-1 protein prevents Janus Kinase/STAT-dependent inhibition of beta cell insulin gene transcription and secretion in response to interferon- γ . **Journal of Biological Chemistry** 276: 25862-70.
 16. Dupraz P., **Cottet S.**, Hamburger F., Dolci W., Felley-Bosco E., and Thorens B. (2000)
Dominant negative MyD88 proteins inhibit interleukin-1 α /interferon- γ -mediated induction of nuclear factor kappa B-dependent nitrite production and apoptosis in beta cells. **Journal of Biological Chemistry** 275: 37672-8.
 17. Crottet P., **Cottet S.**, and Corthésy B. (1999)
Expression, purification and biochemical characterization of recombinant murine secretory component: a novel tool in mucosal immunology. **Biochemical Journal** 341: 299-306.
 18. **Cottet S.**, and Corthésy B. (1997)
Cellular processing limits the heterologous expression of secretory component in mammalian cells. **European journal of Biochemistry** 246: 23-31.
 19. Rindisbacher L., **Cottet S.**, Wittek R., Kraehenbuhl J.-P., and Corthésy B. (1995)
Production of human secretory component with dimeric IgA binding capacity using viral expression systems.

Fellowships

- (2011 - 2014) **Swiss National Science Foundation (31003A-138313)**
Deciphering the role of rod- and cone-specific cell death pathways in *Rpe65*-mediated Leber's congenital amaurosis
- (2007 - 2010) **Swiss National Science Foundation (31003A-118336)**
Deciphering and modulating Bcl-2-related pathway in Leber's Congenital Amaurosis, a new therapeutic approach to prevent retinal degeneration
- (2009) **Swiss Telethon Foundation**
Challenging the protective role of α -crystallins in Bax-mediated retinal degeneration
- (2007) **Swiss Telethon Foundation**
Modulating Bcl-2-related apoptotic pathway in Leber's congenital amaurosis, a new therapeutic approach to prevent retinal degeneration
- (2006) **Swiss Telethon Foundation**
Modulating apoptosis signaling pathways in Leber's congenital amaurosis, a new therapeutic approach to prevent retinal degeneration

National and international meetings

Association for Research in Vision and Ophthalmology (Fort Lauderdale, USA, 2004)

Swiss Retina Meeting III (Brunnen, Switzerland, 2005)

Association for Research in Vision and Ophthalmology (Fort Lauderdale, USA, 2005)

- Targeted silencing of RPE65 in the retinal pigment epithelial cell line ARPE-19 using lentivirus-mediated siRNA delivery

Swiss Retina Meeting IV (Brunnen, Switzerland, 2006)

- Expression analysis of retinal genes in the *RPE65* mouse model

Association for Research in Vision and Ophthalmology (Fort Lauderdale, USA, 2006)

- Impaired viability, morphology and cell-surface expression of integrins in the retinal pigment epithelial cell line ARPE-19 showing siRNA-targeted silencing of RPE65 protein
- Biological characterization of gene response in *Rpe65*^{-/-} mouse model of Leber's congenital amaurosis during progression of the disease
- Altered expression of pro- and anti-apoptotic genes in *Rpe65*^{-/-} mouse model of Leber's congenital amaurosis

Swiss Retina Meeting V (Brunnen, Switzerland, 2007)

- Triggering Bcl-2-related apoptotic pathway in *Rpe65*^{-/-} mouse model

Association for Research in Vision and Ophthalmology (Fort Lauderdale, USA, 2007)

- Triggering Bcl-2-related apoptotic pathway in *Rpe65*^{-/-} mouse model of Leber's congenital amaurosis

Apoptosis World 2008 – From mechanisms to applications (Luxembourg, Luxembourg, 2008)

- Triggering Bcl-2-related apoptotic pathway in *Rpe65*^{-/-} mouse model of Leber's congenital amaurosis

Association for Research in Vision and Ophthalmology (Fort Lauderdale, USA, 2008)

- Proteoglycan expression is induced in the outer retina during retinal degeneration in *Rpe65*^{-/-} mice
- Reduced expression of Myo7a may be responsible for abnormal opsin distribution in *Rpe65*^{-/-} mice

International Society of Ocular Cell Biology (San Diego, USA, 2008)

- Phototransduction-dependent activation of Bcl-2-related pathway in *Rpe65*^{-/-} mouse model of Leber's congenital amaurosis

Swiss Eye Research VII (Bienne, Switzerland, 2009)

- Bax-induced apoptosis in Leber's congenital amaurosis: a dual role in rod and cone degeneration

Association for Research in Vision and Ophthalmology (Fort Lauderdale, USA, 2009)

- Bax-induced apoptosis in Leber's congenital amaurosis: a dual role in rod and cone degeneration

6th Pro Retina meeting, annual meeting (Potsdam, Germany, 2010)

- Cell death pathways in photoreceptor degeneration (**invited speaker**)

Swiss Eye Research VIII (Bienne, Switzerland, 2010)

- Mechanisms of cell death in *Rpe65*^{-/-} mouse model

XIV International Symposium on Retinal Degeneration (Mont-Tremblant, Canada, 2010)

- Early but transient apoptosis of rods in *Rpe65*-LCA mice: role of autophagy as a cellular survival response

International Society of Ocular Cell Biology (Vancouver, Canada, 2011)

- Early and transient apoptosis of rod photoreceptors in *Rpe65*^{-/-} mice: putative role of autophagy as a cellular survival response

Réunion de la Société de Génétique Ophtalmologique Francophone (Lausanne, Switzerland, 2011)

- Implication de Mef2c lors de la dégénérescence rétinienne chez la souris invalidée pour *Rpe65*

XV International Symposium on Retinal Degeneration (Bad Gögging, Germany, 2012)

- Investigating the role of α -crystallins in photoreceptor maintenance and survival

European Cell Death Organization, 20th Euroconference (Roma, Italy, 2012)

- Cytoprotective action of α -crystallins against Bax-dependent apoptosis of photoreceptor cells

Editorial activities

Ad-hoc referee for scientific journals including Molecular Vision, Apoptosis, Brain, American Journal of Physiology (Cell Physiology)