Alexis Bemelmans, PhD

39 years old, French citizenship
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RESEARCHER

NEUROBIOLOGY - MOLECULAR BIOLOGY

IN VIVO EXPERIMENTATION

EDUCATION	1999: **PhD in molecular and cellular pharmacology (University Paris VI, France)**. Obtained with the highest distinction. 1994: Postgraduate certificate in molecular and cellular pharmacology (University Paris VI, good distinction). 1992: Master's degree in cellular biology and physiology (University Paris VI). ➢ **Competence certificate for animal experimentation** (September 2000). ➢ **Supplementary competence certificate in animal surgery** (December 2002).
WORK EXPERIENCES	Since 2007: **Project Manager, FOVEA PHARMACEUTICALS S.A.**, Paris, France. www.fovea-pharma.com 2004-07: **Researcher in the Unit of Gene Therapy and Stem Cells Biology**, Jules-Gonin Eye Hospital, Lausanne Switzerland. In charge of the gene therapy projects for Leber congenital amaurosis and ocular neovascularizations. Supervision of the work of 2 technicians and 1 PhD student. 1999-2003: **Project Leader "Business Development" for BioVectys SA development,** a biotech company incorporated in November 2000 and dedicated to the treatment of neurological diseases by gene transfer. Writing up of the business plan and of grant applications (which were granted by ANVAR (French agency for research valorisation) in 2000, by French research ministry in 2000 and 2001, by Association Retina France in 2002 and 2003. Setting up of a network with academic partners for a project of gene therapy for retinal diseases. 1994-99: **PhD in a French academic lab**, molecular genetic of neurotransmission (CNRS) headed by Dr J Mallet (la Pitié-Salpêtrière Hospital, Paris). Subject: neuroprotective gene transfer in *in vitro* and *in vivo* models of Huntington's disease.
TECHNICAL SKILLS	Molecular Biology: construction of recombinant plasmid, production of viral vectors (oncoretrovirus, adenovirus and lentivirus derived), real-time pcr Cell Biology: cell lines, primary culture of neural cells, flow cytometry (FacsCalibur) *In Vivo* (rodents): stereotaxic surgery, eye injections, behavioural tests, electroretinogram recordings. Histology: cryostat, paraffin, immunolabeling, *in situ* hybridization, morphometric analysis, knowledge of confocal microscpy
TEACHING EXPERIENCES	2000 - 2003: **module of prokaryotic molecular biology** (Bachelor's degree, 45 hours), ISTM (Institute of Technology and Management, Paris). 1998 and 1999: **setting up of the molecular biology module** (40 hours) for the bachelor's degree in molecular genetics, University of Evry. 1997: **setting up of an adult continuing education in biochemistry** (20 hours). Title: introduction to biochemistry. Public: laboratory technicians.
MISCELLANEOUS	**French:** mother language, excellent oral and writing skills. **English:** fluent, good writing skills (scientific articles, research grants, etc…). **Computing:** Statistical analysis (StatView, JMP), Morphometric analysis (Samba software, AnalySIS software), Microsoft Office, Adobe Photoshop, Windows and Apple environment.

PUBLICATIONS

(Peer-reviewed Journals)

Bemelmans A.-P., Kostic C., Cachafeiro M., Crippa S.V., Wanner D., Tekaya M., Wenzel A., Arsenijevic Y. (2008) Lentiviral gene transfer-mediated cone vision restoration in RPE65 knockout mice. *Advances in Experimental Medecine and Biology*, **613**:89-95

Escartin C., Boyer F., Bemelmans A.-P., Hantraye P., Broullet E. (2007) IGF-1 exacerbates the neurotoxicity of the mitochondrial inhibitor 3NP in rats. *Neuroscience Letters*, **425**:167-172

Bemelmans A.-P., Kostic C., Hornfeld D., Jaquet M., Crippa S.V., Hauswirth W.W., Lem J., Wang Z., Schorderet D.E., Munier F.L., Wenzel A., Arsenijevic Y. (2006) Lentiviral vectors containing a retinal pigment epithelium specific promoter for leber congenital amaurosis gene therapy. *Advances in Experimental Medicine and Biology*, **572**: 247-253.

Molles B.E., Maskos U., Pons S., Besson M., Guiard P., Guilloux J.-P., Evrard A., Cormier A., Mameli-Engvall M., Cloez-Tayarani I., Nakatani H., Dufour N., Bemelmans A.-P., Mallet J., Cazala P., Gardier A.-M., David V., Faure P., Granon S., Changeux J.-P. (2006) Targeted in vivo expression of nicotinic acetylcholine receptors in mouse brain using lentiviral expression vectors. *Journal of Molecular Neuroscience*. **30**: 105-106.

Bemelmans A.-P., Kostic C., Crippa S.V., Hauswirth W.W., Lem J., Munier F.L., Seeliger M.W., Wenzel A., Arsenijevic Y. (2006) Lentiviral-mediated transfer of the RPE65 cDNA rescues both survival and function of cone photoreceptors in a mouse model of Leber congenital amaurosis. *PLoS Medicine*, **3**: 1892-1903.

Bemelmans A.-P., Husson I., Mallet J., Kosofsky B.E. and Gressens P. (2006) Viral-mediated gene transfer of BDNF is neuroprotective in a mouse model of neonatal excitotoxic challenge. *Journal of Neuroscience Research*, **83**: 50-60.

Girard C, Bemelmans A.-P., Dufour N, Mallet J, Bachelin C, Nait-Oumesmar B, Baron-Van Evercooren A, Lachapelle F. (2005) Grafts of brain-derived neurotrophic factor and neurotrophin 3-transduced primate Schwann cells lead to functional recovery of the demyelinated mouse spinal cord. *Journal of Neuroscience*, **25**: 7924-7933.

Brizard M., Carcenac C., Bemelmans A.-P., Feuerstein C., Mallet J., Savasta M. (2006) Functional reinnervation from remaining DA terminals induced by GDNF lentivirus in a rat model of early Parkinson's disease. *Neurobiology of Disease,* **21**: 90-101.

Maskos U., Molles B.E., Pons S., Besson M., Guiard B.P., Guilloux J.P., Evrard A., Cazala P., Cormier A., Mameli-Engvall M., Dufour N., Cloez-Tayarani I., Bemelmans A.-P., Mallet J., Gardier A.M., David V., Faure P., Granon S., Changeux J.P. (2005) Nicotine reinforcement and cognition restored by targeted expression of nicotinic receptors. *Nature*, **436**: 103-107.

Bemelmans A.-P., Bonnel S., Houhou L., Dufour N., Nandrot E., Helmlinger D., Sarkis C., Abitbol M. and Mallet J. (2005) Retinal cell type expression specificity of HIV-1-derived gene transfer vectors upon subretinal injection in the adult rat: influence of pseudotyping and promoter. *Journal of Gene Medicine*, **7**: 1367-1374.

Escartin C., Boyer F., Bemelmans A.-P., Hantraye P. and Brouillet E. (2004) Insulin Growth Factor-1 protects against excitotoxicity in the rat striatum, *NeuroReport*, **15**: 2251-2254.

Husson I., Rangon C.M., Lelièvre V., Bemelmans A.-P., Sachs P., Mallet J., Kosofsky B. E. and Gressens P. (2005) BDNF-induced white matter neuroprotection and stage-dependant neuronal survival following a neonatal excitotoxic challenge, *Cerebral Cortex*, **15**: 250-261.

Bemelmans A.-P., Horellou P., Pradier L., Brunet I., Colin P., Mallet J. (1999) Brain-derived neurotrophic factor-mediated protection of striatal neurons in an excitotoxic rat model of Huntington's disease, as demonstrated by adenoviral gene transfer. *Hum Gene Ther*, **10**: 2987-2997.

Barkats M., Bemelmans A.-P., Geoffroy M.-C., Robert J.-J., Loquet I., Horellou P., Revah F., Mallet J. (1996) An adenovirus encoding CuZnSOD protects cultured striatal neurones against glutamate toxicity. *Neuroreport*, **7**:497-501.

ORAL PRESENTATIONS *(International Meetings)*	Bemelmans A.-P., Kostic C., Hornfeld D., TekayaM., Crippa S.V., Hauswirth W.W., Lem J., Seeliger M., Wenzel A., Arsenijevic Y. Rescue of Cone Photoreceptors after Lentiviral Gene Transfer of Rpe65 cDNA in Knockout Mouse Models of Leber Congenital Amaurosis. 9th Annual Meeting of ASGT, Baltimore, Maryland. May 31th-June 4th, 2006. Bemelmans A.-P., Wenzel A., Afanasieva T., Kostic C., Jaquet M., Munier F.L., Arsenijevic Y. Neuroprotective properties of an Anti-VEGF single-chain antibody administered by gene transfer in the mouse retina. 13th Annual Congress of ESGT, Prague, Czech Republic. Oct 29th-Nov 1st, 2005. Bemelmans A.-P., Kostic C., Hornfeld D., Hauswirth W.W., Lem J., Schorderet D.F., Munier F.L., Seeliger M., Wenzel A., Arsenijevic Y. Transfert de gène par vecteur lentiviral de l'ADNc RPE65 dans deux lignées de souris knockout modélisant l'amaurose congénitale de Leber. 4ème congrès annuel de la société francophone de thérapie cellulaire et génique, Lyon, France. 28-29 juin 2005.
PRINCIPAL COMMUNICATIONS *(International Meetings)*	Bemelmans A.-P., Kostic C., Hornfeld D., Hauswirth W.W., Lem J., Schorderet D., Munier F.L., Seeliger M., Wenzel A. and Arsenijevic Y. Lentiviral gene transfer of RPE65 cDNA in two knock-out mouse models of Leber congenital amaurosis. *Association for Research in Vision and Ophthalmology 2005 Annual Meeting*, Fort Lauderdale, Florida USA. May 1-5, 2005. Bemelmans A.-P., Kostic C., Wenzel A., Jaquet M., Hauswirth W.W., Lem J., Schorderet D., Munier F.L. and Arsenijevic Y. RPE65 promoter activity in the retina of Leber congenital amaurosis genetic mouse models, as revealed by lentiviral-mediated trasnfer of the GFP gene. *XI International Symposium on Retinal Degeneration*, Perth, Australia. August 23-28, 2004. Bemelmans A.-P., Dufour N., Sarkis C., He Y., Houhou L. and Mallet J. Tropism changes of HIV-1 based vectors pseudotyped with various lyssavirus envelopes in the central nervous system. *The American Society of Gene's Therapy 5th Annual Meeting*. Boston, USA. June 5-9, 2002. Bemelmans A.-P., Horellou P., Pradier L., Brunet I., Colin P., Berrard S. F., Revah F. and Mallet J. Adenovirus mediated gene transfer of BDNF in a rodent model of Huntington's disease. *Society For Neuronscience 28th Annual Meeting*. Los Angeles, USA. November 7-12, 1998. Bemelmans A.-P., Barkats M., Horellou P., Robert J.-J., Geoffroy M.-C., Colin P., Lundberg C., Björklund A. and mallet J. Replacement and neuroprotecting strategies using gene transfer in rat models of Huntington's disease. *6th International Neural Transplantation Meeting*. San Diego, USA. February 13-16, 1997.
BOOK CHAPTER	Bemelmans A.-P., Kostic C., Hornfeld D., Jaquet M., Crippa S., Hauswirth W.W., Lem J., Schorderet D., Munier F.L. , Wenzel A. and Arsenijevic Y. Lentiviral vectors containing a retinal pigment epithelium specific promoter for Leber congenital amaurosis gene therapy. In Retinal Degenerative Diseases, JG Hollyfield, RE Anderson and MM LaVail eds. Springer, New York, 2005.