
BIOGRAPHICAL SKETCH

NAME BRUNET, ANNE	POSITION TITLE Assistant Professor of Genetics		
eRA COMMONS USER NAME BRUNET.ANNE			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Ecole Normale Supérieure, University of Paris, France	B. Sc.	1992	Cell Biology and Genetics
University of Nice, France	Ph.D.	1997	Cell Biology
Harvard Medical School, Boston	(Post-doc)	1998-2003	Neuroscience

A. Positions and Honors.**Positions and Employment**

1992-1997 Graduate student, Jacques Pouysségur's laboratory, University of Nice
 1998-2003 Post-doctoral fellow, Michael Greenberg's laboratory, Harvard Medical School, Boston, MA
 2004-present Assistant Professor of Genetics, Stanford University School of Medicine

Other Experience and Professional Memberships

1991 Summer research student, Ecole Normale Supérieure, Paris, Jean Massoulié's laboratory
 1992 Summer research student, Pasteur Institute, Paris, Philippe Brûlet's laboratory
 1993 Summer research student, Institute of Molecular Biology, Copenhagen, Olaf Nielsen's laboratory
 1995-1997 Teaching Assistant in Molecular Biology, University of Nice.
 2001-2002 Lecturer in the MD/PhD program, Harvard Medical School.

Honors

1992 B. Sc. *summa cum laude*
 1993-1997 Ecole Normale Supérieure pre-doctoral fellowship.
 1993 EMBO short term fellowship.
 1997 EMBO long term post-doctoral fellowship.
 1998-2000 Human Frontier post-doctoral fellowship.
 2000 Medical Foundation (Charles King) post-doctoral fellowship.
 2000-2002 Goldenson-Berenberg post-doctoral fellowship at Harvard Medical School.
 2003 Harvard-Radcliffe Institute for Advanced Studies fellowship.
 2003 La Caze-Policart Lacassagne Award from the French National Academy of Sciences
 2005 Pfizer/AFAR Innovation in Aging Research Award
 2005 Klingenstein Award in Neuroscience
 2005 Ellison Medical Foundation Scholar Award *(awarded)*
 2005 Damon Runyon Scholar Award *(awarded)*
 2006 Sloan Research Fellowship
 2007 Glenn Award for Research in Biological Mechanisms of Aging
 2007 McCormick Award for Women in Science
 2008 California Institute of Regenerative Medicine New Faculty Award

B. Selected peer-reviewed publications.

Pagès, G.*, Brunet, A.*, L'Allemain, G. and Pouyssegur, J. (1994) Constitutive mutant and putative regulatory serine phosphorylation site of mammalian MAP kinase kinase (MEK1). *EMBO J.* 13: 3003-3010. *: both authors have contributed equally to the work.

Lenormand, P., Sardet, C., Pagès, G., L'Allemain, G., Brunet, A. and Pouyssegur, J. (1994) Growth factors induce nuclear translocation of MAP kinases (p42mapk and p44mapk) but not their activator MAP kinase kinase (p45mapkk) in fibroblasts. *J. Cell. Biol.* 122: 1079-1088.

Brunet, A.*, Pagès, G.* and Pouyssegur, J. (1994) Growth factor-stimulated MAP kinase induces rapid retrophosphorylation and inhibition of MAP kinase kinase (MEK1). *FEBS Lett.* 346: 299-303. *: both authors have contributed equally to the work.

Brunet, A., Pagès, G. and Pouyssegur, J. (1994) Constitutively active mutants of MAP kinase kinase (MEK1) induce growth factor-relaxation and oncogenicity when expressed in fibroblasts. *Oncogene* 9: 3379-3387.

Papin, C., Eychène, A., Brunet, A., Pagès G., Pouyssegur, J., Calothy, G. and Barnier, J.V. (1995) B-Raf protein isoforms interact with and phosphorylate MEK-1 on serine residues 218 and 222. *Oncogene* 10: 1647-1651.

Pagès, G., Stanley, E.R., Le Gall, M., Brunet, A. and Pouyssegur, J. (1995) The mouse p44 mitogen-activated protein kinase (extracellular signal-regulated kinase 1) gene. *J. Biol. Chem.* 270: 26986-26992.

Brunet, A. and Pouyssegur, J. (1996) Identification of MAP kinase domains by re-directing stress signals into growth factor responses. *Science* 272: 1652-1655.

Lavoie, J.N., L'Allemain, G., Brunet, A., Müller, R. and Pouyssegur, J. (1996) Cyclin D1 expression is regulated positively by the p42/p44MAPK and negatively by the p38/HOG MAPK pathway. *J. Biol. Chem.* 271: 20608-20616.

Brondello, J-M., Brunet, A., Pouyssegur, J. and McKenzie, F.R. (1997) The dual specificity Mitogen-activated protein kinase phosphatase-1 and-2 are induced by the p42/p44MAPK cascade. *J. Biol. Chem.* 272: 1368-1376.

Briant, L, Robert-Hebmann, V., Sivan, V., Brunet, A., Pouyssegur, J. and Devaux, C. (1998) Involvement of extracellular signal-regulated kinase module in HIV-mediated CD4 signals controlling activation of nuclear factor-kappa B and AP-1 transcription factors. *J. Immunol.* 160: 1875-1885.

Englaro, W., Bertolotto, C., Busca, R., Brunet, A., Pagès, G., Ortonne, J-P and Ballotti, R. (1998): Inhibition of the mitogen-activated protein kinase pathway triggers B16 melanoma cell differentiation. *J. Biol. Chem.* 273:9966-9970.

Lenormand, P., Brondello, J-M., Brunet, A. and Pouyssegur, J. (1998) Growth factor-induced p42/p44 MAPK nuclear translocation and retention requires both MAPK activation and neosynthesis of nuclear anchored proteins *J. Cell Biol.* 142:625-33.

Brunet, A., Roux, D., Lenormand, P., Dowd, S., Keyse, S. and Pouyssegur, J. (1999) Nuclear translocation of p42/p44 mitogen-activated protein kinase is required for growth factor-induced gene expression and cell cycle entry. *EMBO J.* 18: 664-74.

Brunet, A., Bonni, A., Zigmund, M.J., Lin, M.Z., Juo, P., Hu, L.S., Anderson, M.J., Arden, K.C., Blenis, J., Greenberg, M.E. (1999) Akt promotes cell survival by phosphorylating and inhibiting a Forkhead transcription factor. *Cell* 96: 857-868.

Bonni, A., Brunet, A., West, A.E., Datta, S.R., Takasu, M.A., Greenberg, M.E. (1999) Cell survival promoted by the Ras-MAPK signaling pathway by transcription-dependent and transcription-independent mechanisms. *Science*, 286:1358-1362.

Nichols, A., Camps, M., Gillieron, C., Chabert, C., Brunet, A., Wilsbacher, J., Cobb, M., Pouyssegur, J., Shaw, J.P., Arkinstall, S. (2000) Substrate recognition domains within extracellular signal-regulated kinase mediate binding and catalytic activation of mitogen-activated protein kinase phosphatase-3. *J Biol Chem.* 275: 24613-21.

- Brunet, A., Park, J., Tran, H., Hu, L.S., Hemmings, B.A., Greenberg, M.E. (2001) The protein kinase SGK mediates survival signals by phosphorylating the Forkhead transcription factor FKHRL1/FOXO3a. ***Mol. Cell Biol.*** 21:952-965.
- Shin, I., Bakin, A.V., Rodeck, U., Brunet, A., Arteaga, CL. (2001) Transforming growth factor beta enhances epithelial cell survival via Akt-dependent regulation of FKHRL1. ***Mol. Biol. Cell.*** 12 :3328-39.
- Brunet, A.*, Kanai, F.* , Stehn, J., Xu, J., Sarbassova, D., Frangioni, D., Dala, J.V., DeCaprio, J.A, Greenberg, M.E. and Yaffe, M.B. (2002) 14-3-3 Transits to the Nucleus and Actively Participates in Dynamic Nucleo-Cytoplasmic Transport. ***J. Cell Biol.*** 156:817-828 *: both authors have contributed equally to the work.
- Tran, H.* , Brunet, A.*, Grenier, J.M., Datta, S.R., Fornace, Jr., A.J., DiStefano, P.S., Chiang, L.W. and Greenberg, M.E. (2002). DNA repair pathway stimulated by the Forkhead transcription factor FOXO3a (FKHRL1) through the GADD45 protein. ***Science*** 296:530-4. *both authors have contributed equally to the work.
- Chou, F.L., Hill, J.M., Hsieh, J.C., Pouyssegur, J., Brunet, A., Glading, A., Uberall, F., Ramos, J.W., Werner, M.H. and Ginsberg, M.H. (2003). PEA-15 binding to ERK1/2 MAP kinases is required for its modulation of integrin activation. ***J. Biol. Chem.*** 278(52): 52587-97.
- Brunet, A., Sweeney, L.B., Sturgill, F.J., Chua, K.F., Greer, P.L., Lin, Y., Tran, H., Ross, S.E., Mostoslavsky, R., Cohen, H., Hu, L.S., Cheng, H-L., Jedrychowsky, M., Gygi, S.P., Sinclair, D.A., Alt, F.W., Greenberg M.E. (2004) Stress-Dependent Regulation of FOXO transcription factors by the SIRT1 Deacetylase. ***Science*** 303: 2011-5. Advanced online publication.
- Greer, E.L., Dowlathshahi, D., Banko, M.R., Hoang K., Blanchard, D., and Brunet, A. (2007) An AMPK FOXO pathway mediates the extension of lifespan induced by a novel method of dietary restriction in *C. elegans*. ***Current Biology*** 17:1646-56.
- Greer, E.L., Oskoui, P.R. Banko, M.R., Maniar, J.M., Gygi, M.P., Gygi, S.P., and Brunet A. (2007) The energy sensor AMP-activated protein kinase directly regulates the mammalian FOXO3 transcription factor. ***J. Biol. Chem*** 282:30107-19.
- Greer, E.L. and Brunet, A. (2009) Different dietary restriction regimens extend lifespan by both independent and overlapping genetic pathways in *C. elegans* ***Aging Cell (in press)***

Reviews

- Brunet, A. and Pouyssegur, J. (1997) Mammalian MAP kinase modules: how to transduce specific signals. ***Essays Biochem.*** 32:1-16.
- Datta, S.R., Brunet, A. and Greenberg, M.E. (1999) Cellular survival: a play in three Akts. ***Genes & Dev.*** 13: 2905-2927.
- Brunet, A., Datta, S.R. and Greenberg, M.E. (2001) Transcription-dependent and -independent control of neuronal survival by the PI3K-Akt signaling pathway. ***Curr. Opin. Neurobiol.*** 11: 297-305.
- Tran, H., Brunet, A., Griffith, E., and Greenberg, M.E. The Many Forks in FOXO's Road. ***Sci STKE.*** (2003 Mar 4)(172):RE5.
- Brunet, A., Tran, H. and Greenberg, M.E. The FOXO family of transcription factors: key targets of the PI3K-Akt pathway that regulate cell proliferation, survival and organismal aging. ***Handbook of Cellular Signaling*** 2003.
- Greer, E. L., and Brunet, A. (2005). FOXO transcription factors at the interface between longevity and tumor suppression. ***Oncogene*** 24, 7410-7425.
- Carter, M.E., and Brunet, A. (2007). FOXO transcription factors. ***Current Biology*** 7(4): R113-114
- Brunet, A. and Rando T. (2007) From stem to stern. ***Nature*** 449: 288-289.
- Brunet, A. (2007). Aging and cancer: killing two birds with one worm. ***Nature Genetics*** 39:1306-1307.
- Greer, E. L., and Brunet, A. (2008) FOXO transcription factors in ageing and cancer. ***Acta Physiol.*** 192:19-28.
- Greer, E. L., and Brunet, A. (2008). Signaling networks in aging. ***Journal of Cell Science*** 121:407-412.

Calnan, D. R., and Brunet, A. (2008). The FoxO code. *Oncogene* 27:2276-2288.

Salih, D. A. M. and Brunet, A. (2008). FoxO transcription factors in the maintenance of cellular homeostasis during aging. *Current Opinion in Cell Biology* 20:126-136.

C. Research Support.

Ongoing Research Support

NIH R01 AG026648 09/30/05 – 06/30/10

Sponsor: NIH / NIA

Direct costs: \$194,006/year

Title: Forkhead transcription factors in the stress response

Role: PI

NIH 1R21AG030464

Sponsor: NIH/NIA 07/01/08-06/30/10

Direct costs: \$102,000/year

Title: An unbiased search for genes underlying longevity in a short-lived fish model

Role: PI

NIH R01 AG031198

01/15/09 – 01/14/14

Sponsor: NIH/NIA

Direct costs: \$250,000/year

Title: Molecular mechanisms underlying lifespan extension by dietary restriction

Role: PI

California Institute of Regenerative Medicine New Faculty Award

Sponsor: CIRM 04/01/08-03/31/13

Direct costs: \$300,000/year

Title: Molecular mechanisms involved in adult neural stem cell maintenance

Role: PI

Paul Glenn Foundation Award

09/01/07-08/31/09

Sponsor: Paul Glenn Foundation

Direct costs: \$25,000/year

Role: PI

McCormick Award

12/01/07-11/30/09

McCormick Foundation

Direct costs: \$30,000/year

Title: Defining the interaction between FOXO and the tumor suppressor p53 in cells and in mice

Role: PI

Completed Research Support

Klingenstein Fellowship Award in Neuroscience 07/01/05 – 06/30/08

Sponsor: Klingenstein Fund

Direct costs: \$50,000/year

Title: Role of the Foxo Family of Forkhead Transcription Factors In the Nervous System

Role: PI

Sloan Research Fellowship

01/01/06 – 12/31/07

Sponsor: Alfred P. Sloan Foundation

Direct costs: \$22,853/year

Title: Does the Nervous System Regulate Overall Longevity?

Role: PI

Investigator-initiated Research Grant

07/01/06 – 06/30/08

Sponsor: American Institute for Cancer Research

Direct costs: \$75,000/year

Title: AMPK: a mediator of caloric restriction's ability to suppress cancer

Role: PI

Fellowship Award Brain Tumor Society

09/01/06 – 8/31/08

Sponsor: Brain Tumor Society

Direct costs: \$100,000/year

Title: Defining the role of Foxo transcription factors and Sirt1 deacetylase in suppressing glioblastoma

Role: PI

Pfizer/AFAR Innovations in Aging Research Award

07/01/05 – 6/30/07

Sponsor: Pfizer/American Foundation for Aging Research

Direct costs: \$ 137,282/year

Title: Role of FOXO Transcription Factors In Mammalian Longevity

Role: PI