

## CURRICULUM VITAE

### Jean-Claude SCIMECA

Date of birth: April 20<sup>th</sup> 1963

Senior researcher - Team leader, iBV (Dir. S. Noselli), Université Côte d'Azur.

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### INITIAL TRAINING

- "**Habilitation à Diriger les Recherches**": " Vacuolar ATPase  $\alpha 3$  subunit and infantile malignant osteopetrosis: from positional cloning to bone tissue engineering". Univ. Nice Sophia Antipolis (28/09/2007).
- **PhD**: "ERK1 MAP kinase: mechanism of activation and association with ribosomal S6 kinase". Univ. Nice Sophia Antipolis, (16/12/1992).

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### WORK EXPERIENCE

- 2012 - senior researcher, CNRS, permanent position.
- 1994-1996 - post-doctoral fellow, Centre de Recherche Hôtel-Dieu de Montréal (Dir. S. Meloche).
- 1992 - researcher, CNRS, permanent position.

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### AWARDS

- J Bone Miner Res, (2006) 21, 1757-1769: GE Beranger, student in thesis under the supervision of JC Scimeca, was the winner of the 2006 Raisz-Drezner Award for best first paper.
- Bone (2000) Mar;26(3):207-13: winning Manuscript of the 2000 IBMS/Bone Best Paper Award in the Basic Research category.

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### FUNDING (project leader and collaborations)

- 2018-2021 ANR AAPG2018. PRCE program. (58 k€). BREAKSIT project: Bone REpair Assessment with K-edge Spectral Imaging Technique. Project leader: Bruno BUJOLI.
- 2018 AVIESAN - ITMO Cancer - Plan Cancer 2014-2019 – Équipement pour la recherche en cancérologie (54 k€). Projet: Biomarkers in the microenvironment: exploring tumor progression and therapeutic solutions through last generation microarray electrochemiluminescence detection. Project leader: Jean-Claude SCIMECA.
- 2018 Agence de Développement Economique de la Corse (ADEC) - Société de Coordination de Recherches Thérapeutiques (SCRT) (60 k€). Project: Antitumor activity of a rhenium (I)-diselenoether complex in experimental models of human breast cancer. Academic leader: Jean-Claude SCIMECA.
- 2018 IDEX Academy 2 AAP3 "Complex systems" (23 k€). Project RheoGels: Synthesis, microstructure and RHEology of magnetizable hydroGELS for injectable scaffolds. Project leader: Pavel KUZHIR.
- 2017-2020 R&D Project FUI AAP23 – Eurobiomed (121 k€). SPINEFLEX project: Fatigue resistant and elastic cements for spinal surgery. Industrial leader: Graftys SA (Aix-en-Provence). Academic leader for "région PACA": Jean-Claude SCIMECA.
- 2017-2019 CNRS "Osez l'Interdisciplinarité" AAP 2017 (28 k€). SUBITO project: Low frequency ultrasounds for bone tumour therapy. Project leader: Cécile BARON.

- 2012-2015 R&D Project FUI AAP13 – Eurobiomed (87 k€). SPINEINJECT project: Development of bone substitutes for spinal surgery. Industrial leader: Graftys SA (Aix-en-Provence). Academic leader for “région PACA”: Jean-Claude SCIMECA.
- 2012-2015 CIFRE grant (Industrial agreements for training through research) with GRAFTYS SARM (Aix-en Provence). Doctoral fellowship for Ivana STRAZIC. **(70,5 k€)**. *in vitro* and *in vivo* studies of the interactions between bone cells and bone substitutes. Thesis supervisor: Jean-Claude SCIMECA.
- 2012-2013 Fondation de l'Avenir 2012. Appel pour la Recherche Médicale Appliquée (RMA2012). **(30 k€)**. Bone metastasis of breast cancer: anti-tumour activity of a bisphosphonate-loaded calcium-phosphate cement. Project leader: Heidy SCHMID-ANTOMARCHI.
- 2010 ANR2010. Emergence program. (220 k€). WHATBONE project: Autologous white adipose tissue withdrawn extemporaneously and biphasic calcium phosphate particles for bone defect reconstruction. Project leader: Nathalie ROCHET.
- 2009-2 Fondation de l'Avenir 2009 (RMA2009). **(30 k€)**. Biomaterials for bone defects filling: feasibility study on quantitative monitoring of resorption rate. Project leader: Jean-Claude SCIMECA.
- 2009-1 ANR2009. Emergence program (Emergence-TEC). **(126,5 k€)**. BRB project: Combination of blood and of biphasic calcium phosphate ceramic particles. Project leader: Nathalie ROCHET.
- 2007-2010 Co-funding CNRS/industrial (GRAFTYS SARM, Aix-en Provence): doctoral fellowship for Caroline MOULINE. **(108 k€)**. Structure/function study of vacuolar ATPase a3 subunit and development of a biomaterial suitable for bone tissue engineering. Thesis supervisor: Jean-Claude SCIMECA.
- 2003-2006 Association de Recherche sur la Polyarthrite. Doctoral fellowship for Guillaume BERANGER. **(40,5 k€)**. *Tcirg1* gene function in osteoclastic control of normal and pathologic bone remodelling. Thesis supervisor: Jean-Claude SCIMECA

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## TEACHING

- 2018/ongoing Master 2, teaching module “New Therapeutique Strategies”, 2h.

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## PEER REVIEW FOR FUNDING AGENCIES

- 2014 Indo French Centre for the Promotion of Advanced Research (IFCPAR). Area: 08/Material Science.
- 2009-2011 The Portuguese Foundation for Science and Technology (FCT). Area: Health Sciences. Sub-area: Biomaterials & BioMedical Engineering.

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## PEER REVIEW FOR JOURNALS

- Acta Biomaterialia
- Biochemical and Biophysical Research Communications
- European Cells and Materials
- Journal of Biomedical Materials Research Part A
- Journal of Biomedical Materials Research Part B
- Journal of Cellular Physiology
- Tissue Engineering

**PUBLICATIONS** 

- Strazic Geljic, I., N. Melis, F. Boukhechba, S. Schaub, C. Mellier, P. Janvier, J. P. Laugier, J. M. Bouler, E. Verron and J. C. Scimeca (2018). "Gallium enhances reconstructive properties of a calcium phosphate bone biomaterial." *J Tissue Eng Regen Med* 12(2): e854-e866.
- Schmid-Alliana, A., H. Schmid-Antomarchi, R. Al-Sahlane, P. Lagadec, J. C. Scimeca and E. Verron (2018). "Understanding the Progression of Bone Metastases to Identify Novel Therapeutic Targets." *Int J Mol Sci* 19(1).
- Le Ferrec, M., C. Mellier, F. Boukhechba, T. Le Corroller, D. Guenoun, F. Fayon, V. Montouillout, C. Despas, A. Walcarius, D. Massiot, F. X. Lefevre, C. Robic, J. C. Scimeca, J. M. Bouler and B. Bujoli (2018). "Design and properties of a novel radiopaque injectable apatitic calcium phosphate cement, suitable for image-guided implantation." *J Biomed Mater Res B Appl Biomater* 106(8): 2786-2795.
- Amoretti, N., P. Diego, P. Amelie, O. Andreani, P. Foti, H. Schmid-Antomarchi, J. C. Scimeca and P. Boileau (2018). "Percutaneous vertebroplasty in tumoral spinal fractures with posterior vertebral wall involvement: Feasibility and safety." *Eur J Radiol* 104: 38-42.
- Scimeca, J. C. and E. Verron (2017). "The multiple therapeutic applications of miRNAs for bone regenerative medicine." *Drug Discov Today* 22(7): 1084-1091.
- Rouede, D., E. Schaub, J. J. Bellanger, F. Ezan, J. C. Scimeca, G. Baffet and F. Tiaho (2017). "Determination of extracellular matrix collagen fibril architectures and pathological remodeling by polarization dependent second harmonic microscopy." *Sci Rep* 7(1): 12197.
- Lagadec, P., T. Balaguer, F. Boukhechba, G. Michel, S. Bouvet-Gerbettaz, J. M. Bouler, J. C. Scimeca and N. Rochet (2017). "Calcium supplementation decreases BCP-induced inflammatory processes in blood cells through the NLRP3 inflammasome down-regulation." *Acta Biomater* 57: 462-471.
- Strazic-Geljic, I., I. Guberovic, B. Didak, H. Schmid-Antomarchi, A. Schmid-Alliana, F. Boukhechba, J. M. Bouler, J. C. Scimeca and E. Verron (2016). "Gallium, a promising candidate to disrupt the vicious cycle driving osteolytic metastases." *Biochem Pharmacol* 116: 11-21.
- Verron, E., H. Schmid-Antomarchi, H. Pascal-Mousselard, A. Schmid-Alliana, J. C. Scimeca and J. M. Bouler (2014). "Therapeutic strategies for treating osteolytic bone metastases." *Drug Discov Today* 19(9): 1419-1426.
- Bouvet-Gerbettaz, S., F. Boukhechba, T. Balaguer, H. Schmid-Antomarchi, J. F. Michiels, J. C. Scimeca and N. Rochet (2014). "Adaptive immune response inhibits ectopic mature bone formation induced by BMSCs/BCP/plasma composite in immune-competent mice." *Tissue Eng Part A* 20(21-22): 2950-2962.
- Verron, E., A. Loubat, G. F. Carle, C. Vignes-Colombeix, I. Strazic, J. Guicheux, N. Rochet, J. M. Bouler and J. C. Scimeca (2012). "Molecular effects of gallium on osteoclastic differentiation of mouse and human monocytes." *Biochem Pharmacol* 83(5): 671-679.
- Verron, E., J. M. Bouler and J. C. Scimeca (2012). "Gallium as a potential candidate for treatment of osteoporosis." *Drug Discov Today* 17(19-20): 1127-1132.
- Mouline, C. C., G. E. Beranger, H. Schmid-Antomarchi, D. Quincey, D. Momier, F. Boukhechba, G. F. Carle, N. Rochet and J. C. Scimeca (2012). "Monocytes differentiation upon treatment with a peptide corresponding to the C-terminus of activated T cell-expressed Tirc7 protein." *J Cell Physiol* 227(8): 3088-3098.
- Boukhechba, F., T. Balaguer, S. Bouvet-Gerbettaz, J. F. Michiels, J. M. Bouler, G. F. Carle, J. C. Scimeca and N. Rochet (2011). "Fate of bone marrow stromal cells in a syngenic model of bone formation." *Tissue Eng Part A* 17(17-18): 2267-2278.
- Verron, E., M. Masson, S. Khoshniat, L. Duplomb, Y. Wittrant, M. Baud'huin, Z. Badran, B. Bujoli, P. Janvier, J. C. Scimeca, J. M. Bouler and J. Guicheux (2010). "Gallium modulates osteoclastic bone resorption in vitro without affecting osteoblasts." *Br J Pharmacol* 159(8): 1681-1692.

- Mouline, C. C., D. Quincey, J. P. Laugier, G. F. Carle, J. M. Boulter, N. Rochet and J. C. Scimeca (2010). "Osteoclastic differentiation of mouse and human monocytes in a plasma clot/biphasic calcium phosphate microparticles composite." *Eur Cell Mater* 20: 379-392.
- Balaguer, T., F. Boukhechba, A. Clave, S. Bouvet-Gerbetaz, C. Trojani, J. F. Michiels, J. P. Laugier, J. M. Boulter, G. F. Carle, J. C. Scimeca and N. Rochet (2010). "Biphasic calcium phosphate microparticles for bone formation: benefits of combination with blood clot." *Tissue Eng Part A* 16(11): 3495-3505.
- Moya, A., S. Tambutte, G. Beranger, B. Gaume, J. C. Scimeca, D. Allemand and D. Zoccola (2008). "Cloning and use of a coral 36B4 gene to study the differential expression of coral genes between light and dark conditions." *Mar Biotechnol (NY)* 10(6): 653-663.
- Beranger, G. E., D. Momier, N. Rochet, G. F. Carle and J. C. Scimeca (2008). "Poly(adp-ribose) polymerase-1 regulates Tracp gene promoter activity during RANKL-induced osteoclastogenesis." *J Bone Miner Res* 23(4): 564-571.
- Beranger, G. E., D. Momier, J. M. Guignonis, M. Samson, G. F. Carle and J. C. Scimeca (2007). "Differential binding of poly(ADP-Ribose) polymerase-1 and JunD/Fra2 accounts for RANKL-induced Tcirg1 gene expression during osteoclastogenesis." *J Bone Miner Res* 22(7): 975-983.
- Trojani, C., F. Boukhechba, J. C. Scimeca, F. Vandebos, J. F. Michiels, G. Daculsi, P. Boileau, P. Weiss, G. F. Carle and N. Rochet (2006). "Ectopic bone formation using an injectable biphasic calcium phosphate/Si-HPMC hydrogel composite loaded with undifferentiated bone marrow stromal cells." *Biomaterials* 27(17): 3256-3264.
- Beranger, G. E., D. Momier, N. Rochet, D. Quincey, J. M. Guignonis, M. Samson, G. F. Carle and J. C. Scimeca (2006). "RANKL treatment releases the negative regulation of the poly(ADP-ribose) polymerase-1 on Tcirg1 gene expression during osteoclastogenesis." *J Bone Miner Res* 21(11): 1757-1769.
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- Scimeca, J. C., D. Quincey, H. Parrinello, D. Romatet, J. Grosgeorge, P. Gaudray, N. Philip, A. Fischer and G. F. Carle (2003). "Novel mutations in the TCIRG1 gene encoding the  $\alpha 3$  subunit of the vacuolar proton pump in patients affected by infantile malignant osteopetrosis." *Hum Mutat* 21(2): 151-157.
- Vidal, F., P. Lopez, L. A. Lopez-Fernandez, F. Ranc, J. C. Scimeca, F. Cuzin and M. Rassoulzadegan (2001). "Gene trap analysis of germ cell signaling to Sertoli cells: NGF-TrkA mediated induction of Fra1 and Fos by post-meiotic germ cells." *J Cell Sci* 114(Pt 2): 435-443.
- Santucci-Darmanin, S., F. Vidal, J. C. Scimeca, C. Turc-Carel and V. Paquis-Flucklinger (2001). "Family of SRY/Sox proteins is involved in the regulation of the mouse Msh4 (MutS Homolog 4) gene expression." *Mol Reprod Dev* 60(2): 172-180.
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- Scimeca, J. C., M. J. Servant, J. O. Dyer and S. Meloche (1997). "Essential role of calcium in the regulation of MAP kinase phosphatase-1 expression." *Oncogene* 15(6): 717-725.
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- Van Obberghen, E., V. Baron, J. C. Scimeca and P. Kaliman (1993). "Insulin receptor: receptor activation and signal transduction." *Adv Second Messenger Phosphoprotein Res* 28: 195-201.
- Peraldi, P., J. C. Scimeca, C. Filloux and E. Van Obberghen (1993). "Regulation of extracellular signal-regulated protein kinase-1 (ERK-1; pp44/mitogen-activated protein kinase) by epidermal growth factor and nerve growth factor in PC12 cells: implication of ERK1 inhibitory activities." *Endocrinology* 132(6): 2578-2585.
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- Ballotti, R., V. Baron, N. Gautier, P. Hainaut, J. C. Scimeca, J. Dolais-Kitabgi, R. Lammers, J. Schlessinger, A. Ullrich and E. Van Obberghen (1992). "Activation and regulation of the insulin receptor kinase." *Diabete Metab* 18(1 Pt 2): 98-103.
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- Ballotti, R., J. C. Scimeca, A. Kowalski and E. Van Obberghen (1989). "Antiphosphotyrosine antibodies modulate insulin receptor kinase activity and insulin action." *Cell Signal* 1(2): 195-204.
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