

CURRICULUM VITAE

Jean-Claude SCIMECA

Date of birth: April 20th 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).

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.

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.

FUNDING (project leader and collaborations)

- 2021 CNRS “Modélisation du vivant” AAP 2021 **(27 k€)**. Projet MecaSUROs: Mecanotransduction par Stimulation Ultrasonore dans le contexte de la Régénération Osseuse. Porteur de projet: Carine GUVIER-CURIEN.
- 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 SARL (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 SARL, 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](#)

TEACHING

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

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.

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  ORCID Id. 0000-0003-3773-6110

- Gulati, K., J. C. [Scimeca](#), S. Ivanovski and E. Verron (2021). "Double-Edged Sword: Therapeutic Efficacy vs Toxicity Evaluations of Doped Titanium Implants." *Drug Discov Today*, [PubMed](#)
- Jing, L., S. Rota, D. Momier, J. M. Guignonis, S. Schaub, M. Samson, J. M. Bouler, J. C. [Scimeca](#), N. Rochet and P. Lagadec (2021). "Proteomic analysis identified LBP and CD14 as key proteins in blood/biphasic calcium phosphate microparticle interactions." *Acta Biomater* 127: 298-312. [PubMed](#)
- Bujoli, B., E. Verron and J. C. [Scimeca](#) (2019). "Fibrin as a multipurpose physiological platform for bone tissue engineering and targeted delivery of bioactive compounds". *Pharmaceutics* 11(11): 556. [PubMed](#)
- 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. [PubMed](#)
- 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): 148. [PubMed](#)
- 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. [PubMed](#)
- 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. [PubMed](#)
- [Scimeca](#), J. C. and E. Verron (2017). "The multiple therapeutic applications of miRNAs for bone regenerative medicine." *Drug Discov Today* 22(7): 1084-1091. [PubMed](#)
- 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. [PubMed](#)
- 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. [PubMed](#)
- 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. [PubMed](#)
- 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. [PubMed](#)
- 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. [PubMed](#)
- 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. [PubMed](#)
- 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. [PubMed](#)
- 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. [PubMed](#)
- 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. [PubMed](#)
- 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. [PubMed](#)
- Mouline, C. C., D. Quincey, J. P. Laugier, G. F. Carle, J. M. Bouler, 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. [PubMed](#)
- Balaguer, T., F. Boukhechba, A. Clave, S. Bouvet-Gerbettaz, C. Trojani, J. F. Michiels, J. P. Laugier, J. M. Bouler, 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. [PubMed](#)
- 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. [PubMed](#)
- Beranger, G. E., D. Momier, N. Rochet, G. F. Carle and J. C. [Scimeca](#) (2008). "Poly(ADP-ribose) polymerase-1 regulates Trcp gene promoter activity during RANKL-induced osteoclastogenesis." *J Bone Miner Res* 23(4): 564-571. [PubMed](#)
- 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 Tcigr1 gene expression during osteoclastogenesis." *J Bone Miner Res* 22(7): 975-983. [PubMed](#)
- Trojani, C., F. Boukhechba, J. C. [Scimeca](#), F. Vandenbos, 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. [PubMed](#)
- 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 Tcigr1 gene expression during osteoclastogenesis." *J Bone Miner Res* 21(11): 1757-1769. [PubMed](#)
- Zoccola, D., E. Tambutte, E. Kulhanek, S. Puverel, J. C. [Scimeca](#), D. Allemand and S. Tambutte (2004). "Molecular cloning and localization of a PMCA P-type calcium ATPase from the coral *Stylophora pistillata*." *Biochim Biophys Acta* 1663(1-2): 117-126. [PubMed](#)
- [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. [PubMed](#)
- 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. [PubMed](#)
- 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. [PubMed](#)
- [Scimeca](#), J. C., A. Franchi, C. Trojani, H. Parrinello, J. Grosgeorge, C. Robert, O. Jaillon, C. Poirier, P. Gaudray and G. F. Carle (2000). "The gene encoding the mouse homologue of the human osteoclast-specific 116-kDa V-ATPase subunit bears a deletion in osteosclerotic (oc/oc) mutants." *Bone* 26(3): 207-213. [PubMed](#)

- Valentin, E., R. S. Koduri, J. C. [Scimeca](#), G. Carle, M. H. Gelb, M. Lazdunski and G. Lambeau (1999). "Cloning and recombinant expression of a novel mouse-secreted phospholipase A2." *J Biol Chem* 274(27): 19152-19160. [PubMed](#)
- Arrighi, I., F. Lesage, J. C. [Scimeca](#), G. F. Carle and J. Barhanin (1998). "Structure, chromosome localization, and tissue distribution of the mouse *twik* K⁺ channel gene." *FEBS Lett* 425(2): 310-316. [PubMed](#)
- [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. [PubMed](#)
- Peraldi, P., M. Frodin, J. V. Barnier, V. Calleja, J. C. [Scimeca](#), C. Filloux, G. Calothy and E. Van Obberghen (1995). "Regulation of the MAP kinase cascade in PC12 cells: B-Raf activates MEK-1 (MAP kinase or ERK kinase) and is inhibited by cAMP." *FEBS Lett* 357(3): 290-296. [PubMed](#)
- Vouret-Craviari, V., E. Van Obberghen-Schilling, J. C. [Scimeca](#), E. Van Obberghen and J. Pouyssegur (1993). "Differential activation of p44mapk (ERK1) by alpha-thrombin and thrombin-receptor peptide agonist." *Biochem J* 289 (Pt 1): 209-214. [PubMed](#)
- 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. [PubMed](#)
- 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. [PubMed](#)
- Nguyen, T. T., J. C. [Scimeca](#), C. Filloux, P. Peraldi, J. L. Carpentier and E. Van Obberghen (1993). "Co-regulation of the mitogen-activated protein kinase, extracellular signal-regulated kinase 1, and the 90-kDa ribosomal S6 kinase in PC12 cells. Distinct effects of the neurotrophic factor, nerve growth factor, and the mitogenic factor, epidermal growth factor." *J Biol Chem* 268(13): 9803-9810. [PubMed](#)
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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. [PubMed](#)
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