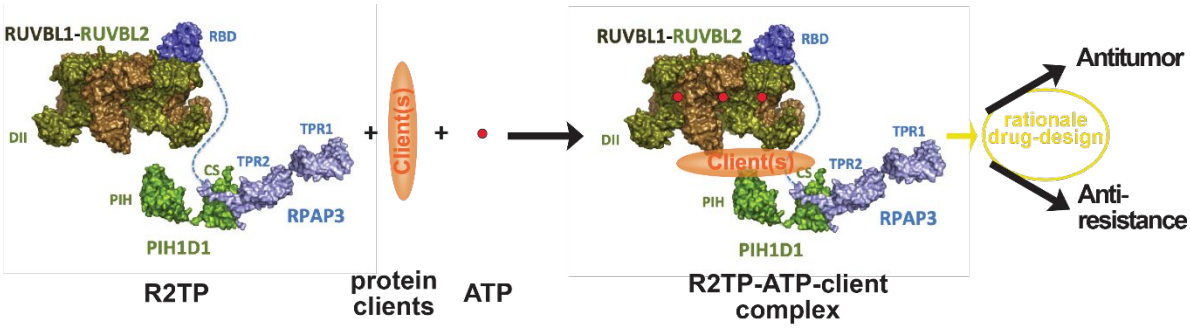
An international PhD position is available in the RNA-RNP team co-led by Dr. Manival, at the IMoPA laboratory *(Ingénierie Moléculaire, Cellulaire et Physiopathologie, https://imopa.cnrs.fr/en/home/)* in Nancy, France. This position is funded by the International Research Partnership (IRP) from *Lorraine University of Excellence* (LUE) and will be co-supervised by Dr T. Bandeiras' laboratory at the iBET (*Instituto de Biologia Experimental e Tecnológica*, Oeiras, Portugal, https://www.ibet.pt). This IRP is named Target R2TP and R2TP-like to identify drug candidates.
The successful candidate will work on the structural characterization of new R2TP ligands to identify innovative drug candidates. She/he will be working under the supervision of Dr. X. Manival (xavier.manival@univ-lorraine.fr) and B. Bragantini (benoit.bragantini@univ-lorraine.fr) from IMoPA and Dr. T. Bandeiras (tiago.bandeiras@ibet.pt) and P. Sousa (pedrosousa@ibet.pt) from iBET.

PhD topic and general objectives:
The first goal (fundamental research) of this PhD Project will be to study the ATP-dependent molecular mechanisms by which R2TP, a HSP90/70 co-chaperon complex, regulates the assembly and maturation of numerous human macromolecular complexes. A better understanding of these mechanisms will provide valuable information to specifically target R2TP:substrate interfaces with the objective to block key R2TP-substrates assembly implicated in specific diseases such as certain types of cancer.
The second goal (research and development) will be to find drug candidates, mainly to fight human cancers where resistance to chemotherapy and ionizing radiation remains. It will require an exhaustive search of new R2TP substrates to then allowed us to choose the most relevant one from a public health perspective.
Finally, the project should lead to the design of new relevant inhibitors for the treatment of many diseases associated with these large molecular complexes including cancer.



Facilities: IMoPA is located on the Brabois-Santé campus on the outskirts of Nancy. The research and teaching activities of IMoPA's scholars fall notably within the ERC code LS1 (Molecules of Life: Biological Mechanisms, Structures and Functions). Hosted in the Biopôle building, IMoPA serves as a hub for a wide range of expertise, providing valuable resources for the various laboratories within the Université de Lorraine's Biology Medicine Health (BMS) scientific cluster. IMoPA offers a warm international working environment with state-of-the-art platforms including biophysics, crystallography, NMR and recently, cryo-EM.
iBET is a private non-profit Biotechnology Research Organization located in the town of Oeiras to the west of Lisbon in Portugal. As an R&D (Research and Development) institution and SME (Small and Medium-sized Enterprise), iBET acts as an interface between academic and private institutions while also creating and organizing autonomous knowledge and expertise. Target areas are biopharmaceuticals and novel therapies including the development of viral gene therapies, *in-vitro* models and methodologies for pre-clinical research and cell therapy applications, protein stability and structural biology for drug design. iBET is equipped with

cutting-edge research facilities ranging from protein production and purification using a broad range of expression hosts to biophysics, crystallography and advanced mass spectrometry.

Benefits: Gross salary: €2,135/month over 36 months, health insurance, total reimbursement of international transport and accommodation expenses in Portugal.
Expected starting date: from now until December 2024.

Applications: Candidates should hold a master's degree in biology, biochemistry, biophysics, or structural biology. Expertise or interest in protein/RNA purification and single-particle cryo-EM will be highly appreciated. Interested candidates should send a CV, a covering letter and the names and email addresses of two referees. These documents should be submitted by email to xavier.manival@univ-lorraine.fr and tiagob@ibet.pt.

Relevant Publications of the Teams:

1) H. GIZARDIN-FREDON[1,2], P. E. SANTO[3,4], M-E CHAGOT[5], B. CHARPENTIER[5], **T. M. BANDEIRAS[3,4]**, **X. MANIVAL[5]**, O. HERNANDEZ-ALBA[1,2], S. CIANFERANI[1,2,*] (2024) *Corresponding author. Denaturing mass photometry for rapid optimization of chemical protein-protein cross-linking reactions. *Nature communications* (IF[2022]=16,6; Q1), to be published.
2) **A. C. F. PAIVA**, A. R. LEMOS, **P. BUSSE**, M. T. MARTINS, D. O. SILVA, M. C. FREITAS, S. P. SANTOS, F. FREIRE, E. J. BARREY, **X. MANIVAL**, L. KOETZNER, T. HEINRICH, A. WEGENER, U. GRADLER, **T. M. BANDEIRAS**, D. SCHWARZ* and **P. M. F. SOUSA*** (2023). *corresponding author. Extract2Chip—Bypassing Protein Purification in Drug Discovery Using Surface Plasmon Resonance. *Biosensors*, (IF[2022]=5,4; Q1), 13, 913; doi.org/10.3390/bios13100913.
3) R. DOS SANTOS MORAIS[1,#,*], P-E. SANTO[2,3,#], M. LEY[4,5,#], C. SCHELCHER[1], Y. ABEL[6,7], L. PLASSART[8], E. DESLIGNIERE[4,5], M-E. CHAGOT[1], M. QUINTERNET[9], **A-C.F. PAIVA[2,3]**, S. HESSMANN[4,5], N. MORELLET[10], P.M.F. SOUSA[2,3], F. VANDERMOERE[11], E. BERTRAND[6,7], B. CHARPENTIER[1], **T.M. BANDEIRAS[2,3]**, C. PLISSON-CHASTANG[8], C. VERHEGGEN[6,7], S. CIANFERANI[4,5,*], and **X. MANIVAL[1,*]** (2022). [#]Co-first author; *corresponding author. Deciphering cellular and structural determinants of human DPCP protein in complex with RUVBL1/RUVBL2 AAA-ATPases. *J. Mol. Biol.*, (IF[2022]=6,2; Q1), 434, 19: 167760; 10.1016/j.jmb.2022.167760.
4) **B. BRAGANTINI[+]**, C. CHARRON[+], M. BOURGUET[+], A. PAUL[+], D. TIOTIU, B. ROTHE, H. MARTY, G. TERRAL, S. HESSMANN, L. DECOURTY, M-E CHAGOT, J-M STRUB, S. MASSENET, E. BERTRAND, M. QUINTERNET, C. SAVEANU, S. CIANFERANI, S. LABIALLE*, **X. MANIVAL*** and B. CHARPENTIER* (2021). [+]Co-first author; *corresponding author. The box C/D snoRNP assembly factor Bcd1 interacts with the histone chaperone Rtt106 controlling its association with RNA polymerase II. *Nature communications*, (IF[2021]=17,7; Q1), Mar 25; 12(1): 1859. doi: 10.1038/s41467-021-22077-4.
5) Y. ABEL, **A-C.F. PAIVA**, J. BIZARRO, M-E CHAGOT, P-E SANTO, M-C ROBERT, M. QUINTERNET, F. VANDERMOERE, **P-M.F. SOUSA**, P. FORT, B. CHARPENTIER, **X. MANIVAL**, **T-M. BANDEIRAS**, E. BERTRAND*, and C. VERHEGGEN* (2021). NOPCHAP1 is a PAQosome cofactor that helps loading NOP58 on RUVBL1/2 during box C/D snoRNP biogenesis. *Nucleic Acids Res.*, (IF[2021]=19,2; Q1), Volume 49, Issue 2, 25 January 2021, Pages 1094–1113, doi: 10.1093/nar/gkaa1226.
6) C. MAURIZY[+], M. QUINTERNET[+], Y. ABEL, C. VERHEGGEN, P-E SANTO, M. BOURGUET, **A-C-F PAIVA**, **B. BRAGANTINI**, M-E CHAGOT, M-C ROBERT, C. ABEZA, P. FABRE, P. FORT, F. VANDERMOERE, **P-M-F SOUSA**, J-C RAIN, B. CHARPENTIER, S. CIANFERANI, **T-M BANDEIRAS**, B. PRADET-BALADE, **X. MANIVAL*** and E. BERTRAND* (2018). [+]Co-first author; *corresponding author. The RPAP3-Cterminal domain identifies R2TP-like quaternary chaperones. *Nature communications* (IF[2018]=11,9; Q1), 9, 2093.