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Postdoctoral research fellow position available in the Ion Channel Biophysics and PaceLab groups at the the Department of Biosciences, University of Milan (<https://moronilab.com/>, <https://pacelab.it/>)

We seek to hire a highly motivated postdoctoral fellow to **investigate the cellular physiology of HCN4 channel expression in cardiomyocytes** in the team led by professor Anna Moroni (Ion Channel Biophysics) in collaboration with the team of Professor Dario DiFrancesco, head of the PaceLab.

The position is funded through a 5-year grant by the Fondation Leducq-Transatlantic Networks of Excellence in Cardiovascular and Neurovascular Research. The project FANTASY (Fighting AgaiNsT sinus node dysfunction And aSsociated arrhYthmias) investigates mechanisms underlying the Sinus Node Disease (SND) syndrome, and involves basic studies of ion channels modulating cardiac pacemaker activity (HCN4, GIRK4, Cav1.3), in association with clinical studies of SND-patient cohorts.

The successful candidate should be a highly motivated person holding a PhD degree in basic/translational biology, capable of autonomous organizational and experimental activity and willing to work in a team and to share data and ideas.

Previous experience in the fields of cellular/molecular biology techniques including cell cultures, iPSC generation and management, single-cell patch clamp, advanced microscopy, recombinant DNA, CRISPR Cas9 gene-editing techniques, protein biochemistry will be appreciated. Experience in cardiac cell isolation and manipulation would also be appreciated.

The position, opened for two years (with a possibility of one-year renewal), is available from October 1st, 2022. The salary will be in accordance with the University scale and will be adequate to the candidate experience.

Applications including a CV, list of publications and two presentation letters should be sent to Anna Moroni (anna.moroni@unimi.it) and Dario DiFrancesco (dario.difrancesco@unimi.it).

Publications related to the project:

D'Souza A, Wang Y, Anderson C, Bucchi A, Baruscotti M, Olieslagers S, Mesirca P, Johnsen AB, Mastitskaya S, Ni H, Zhang Y, BmBCh NB, Cox C, Wegner S, Bano-Otalora B, Petit C, Gill E, Logantha SJRJ, Dobrzynski H, Ashton N, Hart G, Zhang R, Zhang H, Cartwright EJ, Wisloff U, Mangoni ME, da Costa Martins PA, Piggins HD, DiFrancesco D, Boyett MR. A circadian clock in the sinus node mediates day-night rhythms in Hcn4 and heart rate. *Heart Rhythm*. 2020 Dec 3:S1547-5271(20)31130-9. doi: 10.1016/j.hrthm.2020.11.026. Epub ahead of print. PMID: 33278629.

DiFrancesco D. Comparing pathways for long-term heart rate modulation by the funny current. *J Gen Physiol.* 2019 Sep 2;151(9):1066-1069. doi: 10.1085/jgp.201912409. Epub 2019 Aug 20. PMID: 31431492; PMCID: PMC6719408.

Yavari A, Bellahcene M, Bucchi A, Sirenko S, Pinter K, Herring N, Jung JJ, Tarasov KV, Sharpe EJ, Wolfien M, Czibik G, Steeples V, Ghaffari S, Nguyen C, Stockenhuber A, Clair JRS, Rimmbach C, Okamoto Y, Yang D, Wang M, Ziman BD, Moen JM, Riordon DR, Ramirez C, Paina M, Lee J, Zhang J, Ahmet I, Matt MG, Tarasova YS, Baban D, Sahgal N, Lockstone H, Puliyadi R, de Bono J, Siggs OM, Gomes J, Muskett H, Maguire ML, Beglov Y, Kelly M, Dos Santos PPN, Bright NJ, Woods A, Gehmlich K, Isackson H, Douglas G, Ferguson DJP, Schneider JE, Tinker A, Wolkenhauer O, Channon KM, Cornall RJ, Sternick EB, Paterson DJ, Redwood CS, Carling D, Proenza C, David R, Baruscotti M, DiFrancesco D, Lakatta EG, Watkins H, Ashrafian H. Mammalian $\gamma 2$ AMPK regulates intrinsic heart rate. *Nat Commun.* 2017 Nov 2;8(1):1258. doi: 10.1038/s41467-017-01342-5. PMID: 29097735; PMCID: PMC5668267.

Porro A, Thiel G, Moroni A, Saponaro A. cyclic AMP Regulation and Its Command in the Pacemaker Channel HCN4. *Front Physiol.* 2020 Jul 7;11:771. doi: 10.3389/fphys.2020.00771. PMID: 32733276; PMCID: PMC7358946.

Lolicato M, Bucchi A, Arrigoni C, Zucca S, Nardini M, Schroeder I, Simmons K, Aquila M, DiFrancesco D, Bolognesi M, Schwede F, Kashin D, Fishwick CW, Johnson AP, Thiel G, Moroni A. Cyclic dinucleotides bind the C-linker of HCN4 to control channel cAMP responsiveness. *Nat Chem Biol.* 2014 Jun;10(6):457-62. doi: 10.1038/nchembio.1521. Epub 2014 Apr 28. Erratum in: *Nat Chem Biol.* 2014 Aug;10(8):692. PMID: 24776929.