Job offer

One post-doc position for 24 months is available in the group coordinated by prof Annibale Puca at the IRCCS MultiMedica, Milan, Italy.

The candidate will be involved in the activities of the project financed by the italian Ministry of Health titled "**The longevity-associated variant of BPIFB4: a novel tool against thrombocytosis and "aspirin resistance" in diabetes**" Project code: PNRR-MAD-2022-12376723 in collaboration with the group of Dr. Gaia Spinetti - CUP I43C22000530006 legato al CUP Master del Capofila Neuromed F53C22001830006.

Puca's group recently discovered a novel longevity-associated variant (LAV) of bactericidal/permeability-increasing fold-containing-family-B-member-4 (BPIFB4) protein encoded by a four-SNP haplotype of the BPIFB4 gene. LAV-BPIFB4 enhances health/longevity and vascular cell homeostasis through eNOS activation and progenitor cell mobilization and promotes post-ischemic revascularization.
Preliminary studies show that LAV-BPIFB4 recombinant protein inhibited the hyper aggregation of human platelets in hyperglycemic conditions and enhance endothelial function in mice. Thus, these data candidate LAV-BPIFB4 recombinant protein as a new therapeutic agent to reduce platelet-related abnormalities and thrombotic events in diabetic patients. The present proposal will test whether LAV-BPIFB4 genotype and/or BPIFB4 levels correlate with platelet activity in diabetic patients. Moreover, using in vitro and in vivo approaches will test the hypothesis that treatment with LAV-BPIFB4 recombinant protein affects platelet bio-functions and rescue the diabetic pro-thrombotic phenotype.

Position

IRCCS MultiMedica is a center of excellence for cardiovascular research and offers a highly stimulating scientific environment that supports the close interactions between basic researchers, translational researchers, and clinicians. The Institute is equipped with advanced instrumentations for biomedical research, including a flow cytometry facility (one BD FACS CantoII/3 laser, one BD FACS Fortessa x20/5 laser, and one BD FACS AriaII Cell Sorter/3 laser).

The candidate will be responsible of characterize platelet frequency and differentiation in relation to LAV-BPIFB4 genotype and/or BPIFB4 levels using cell and molecular biology methods in samples collected from a cohort of people with diabetes referring to MultiMedica Hospital in collaboration with the diabetology unit. In particular flow cytometry, ELISA, and real-time PCR will be used to assess peripheral blood circulating levels of the studied variables. Moreover, in vitro platelet and endothelial cell function will be studied in response to BPIFB4 recombinant protein and plasma from patients.

Specific requirements

Candidates should possess a Ph.D. in cardiovascular biology, molecular medicine, or associated fields, Acquired skills in the following procedures are preferred:

- multicolor flow cytometry;
- cell culture.

The candidate should be enthusiastic about research, capable of learning new skills, and happy working both independently and in collaboration with other scientists.
Excellent communication skills (both verbal and written) in English are a prerequisite.

Offer

The successful candidate for this position will be offered a 24-month fixed term employment contract. Applicants interested are invited to send their CVs and an endorsement letter to:

Annibale.puca@multimedica.it

gaia.spinetti@multimedica.it

Candidates of both sexes (L.903/77) are invited to apply.
Please read the privacy policy art. 13 of Regulation (EU) 2016/679 on data protection (GDPR).

Selected publications from Puca's group in the last 5 years

1: Cattaneo M, Beltrami AP, Thomas AC, Spinetti G, Alvino V, Avolio E, Veneziano C, Rolle IG, Sponga S, Sangalli E, Maciag A, Dal Piaz F, Vecchione C, Alenezi A, Paisey S, Puca AA, Madeddu P. The longevity-associated BPIFB4 gene supports cardiac function and vascularization in aging cardiomyopathy. Cardiovasc Res. 2023 Jan 13:cvad008. doi: 10.1093/cvr/cvad008. Epub ahead of print. PMID: 36635236.

2: Ciaglia E, Lopardo V, Montella F, Carrizzo A, Di Pietro P, Malavolta M, Giacconi R, Orlando F, Cattaneo M, Madeddu P, Vecchione C, Puca AA. Transfer of the longevity-associated variant of BPIFB4 gene rejuvenates immune system and vasculature by a reduction of CD38+ macrophages and NAD+ decline. Cell Death Dis. 2022 Jan 27;13(1):86. doi: 10.1038/s41419-022-04535-z. PMID: 35087020; PMCID: PMC8792139.

3: Ciaglia E, Montella F, Lopardo V, Scala P, Ferrario A, Cattaneo M, Carrizzo A, Malovini A, Madeddu P, Vecchione C, Puca AA. Circulating BPIFB4 Levels Associate With and Influence the Abundance of Reparative Monocytes and Macrophages in Long Living Individuals. Front Immunol. 2020 May 29;11:1034. doi: 10.3389/fimmu.2020.01034. PMID: 32547549; PMCID: PMC7272600.

4: Dang Z, Avolio E, Thomas AC, Faulkner A, Beltrami AP, Cervellin C, Carrizzo A, Maciag A, Gu Y, Ciaglia E, Finato N, Damato A, Spinetti G, Alenzi A, Paisey SJ, Vecchione C, Puca AA, Madeddu P. Transfer of a human gene variant associated with exceptional longevity improves cardiac function in obese type 2 diabetic
mice through induction of the SDF-1/CXCR4 signalling pathway. Eur J Heart Fail. 2020 Sep;22(9):1568-1581. doi: 10.1002/ejhf.1840. Epub 2020 May 8. PMID: 32384208; PMCID: PMC8220375.

5: Malavolta M, Dato S, Villa F, Rango F, Iannone F, Ferrario A, Maciag A, Ciaglia E, D'amato A, Carrizzo A, Basso A, Orlando F, Provinciali M, Madeddu P, Passarino G, Vecchione C, Rose G, Puca AA. LAV-BPIFB4 associates with reduced frailty in humans and its transfer prevents frailty progression in old mice.
Aging (Albany NY). 2019 Aug 28;11(16):6555-6568. doi: 10.18632/aging.102209. Epub 2019 Aug 28. Erratum in: Aging (Albany NY). 2019 Oct 25;11(20):9220. PMID: 31461407; PMCID: PMC6738439.

6: Puca AA, Carrizzo A, Spinelli C, Damato A, Ambrosio M, Villa F, Ferrario A, Maciag A, Fornai F, Lenzi P, Valenti V, di Nonno F, Accarino G, Madonna M, Forte M, Calì G, Baragetti A, Norata GD, Catapano AL, Cattaneo M, Izzo R, Trimarco V, Montella F, Versaci F, Auricchio A, Frati G, Sciarretta S, Madeddu P, Ciaglia E, Vecchione C. Single systemic transfer of a human gene associated with exceptional longevity halts the progression of atherosclerosis and inflammation in ApoE knockout mice through a CXCR4-mediated mechanism. Eur Heart J. 2020 Jul 7;41(26):2487-2497. doi: 10.1093/eurheartj/ehz459. PMID: 31289820; PMCID: PMC7340354.

7: Ciaglia E, Montella F, Maciag A, Scala P, Ferrario A, Banco C, Carrizzo A, Spinelli CC, Cattaneo M, De Candia P, Vecchione C, Villa F, Puca AA. Longevity-Associated Variant of BPIFB4 Mitigates Monocyte-Mediated Acquired Immune Response. J Gerontol A Biol Sci Med Sci. 2019 Nov 13;74(Suppl_1):S38-S44. doi: 10.1093/gerona/glz036. PMID: 31074771.