Al collegio docenti del Dottorato in Medicina Molecolare

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Ciclo XXXVII

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Introduction Two independent Genome-Wide Association Studies identified a new Type 2 diabetes (T2D) susceptibility-associated Single Nucleotide Polymorphism (SNP) within the internal promoter of the ANK1 gene. This internal promoter, which is active only in striated muscle tissue, drives the transcription of both sAnk1.5, a small muscle-specific isoform of Ankyrin1 that is located in the sarcoplasmic reticulum membrane, and miR-486, a muscle-enriched microRNA. The C/C variant of this SNP associated with T2D susceptibility, enhances the activity of the ANK1 internal promoter, leading to increased levels of miR-486 and sAnk1.5 in the skeletal muscle (SKM) of C/C individuals compared to either C/T and T/T ones.
To investigate whether increased levels of both sAnk1.5 e miR-486 might associate to T2D susceptibility, we generated and characterized a double transgenic (DTg) mouse model where sAnk1.5 and miR486 are selectively overexpressed in SKM tissue. Previous work in our lab indicated that DTg mice do not exhibit any overt (pre)diabetic phenotype when bred under standard conditions. During my first year of PhD, I thus evaluated whether a high fat diet (HFD) regimen may unmask a (pre)diabetic phenotype in DTg mice.

Methods Congenic 5-months old WT and DTg mice were fed a HFD for 12 weeks. Chow diet (CD) fed mice were used as additional controls. Basal glycaemia, food/caloric intake and weight gain were weekly registered. Intraperitoneal glucose and insulin tolerance tests were performed at the beginning and at the end of the HF dietary regimen. Body fat mass was also quantified by dissecting the adipose tissue from each animal.

Results No significant differences between HFD fed WT and DTg mice were found in terms of basal glycaemia, food/caloric intake, body weight gain and insulin/glucose tolerance. We are currently performing a similar approach on younger WT and DTg mice.

• **Partecipazione a corsi**:

- Ricerche bibliografiche e open access & science (27/05/2022)
- Diritto dei brevetti (30/05/2022)
- Spin Off e Start up della ricerca: concetti introduttivi e presupposti per la nascita di un'impresa (31/05/2022)
- Spin Off e Start up della ricerca: Il modello di business e i regolamenti (07/06/2022)
- Spin Off e Start up della ricerca: L'ecosistema di innovazione a supporto delle start up (13/06/2022)
- Creating value from large archive and big data (15/06/2022)
- I rapporti tra scienza e società: tra persistenze e cambiamenti (20/06/2022)
- Lavoro editoriale per l'editoria scolastica e universitaria (scienze e lettere) (05/09/2022)
- Il ruolo della standardizzazione nei processi di innovazione (07-08/09/2022)
- How to exploit your research idea: a quick introduction to EU project design and management (22-23/09/2022)
- The IPAM 3Rs-3days webinar cycle (Replacement, Reduction, Refinement)