



RESEARCH TOPIC MEM11

The structural and functional role of the A-kinase anchoring protein myospryn in striated muscle

Curriculum MEM

Laboratory name

Sarcomeres in cardiac pathologies, IRCCS Humanitas Research Hospital

Pre-clinical Supervisor

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Abstract

The project will focus on the giant striated muscle-specific protein myospryn, principally present at the sarcoplasmic reticulum (SR), the cardiac intercalated disc, and in and around the nucleus. Through a tripartite motif (TRIM) with its C-terminal region, myospryn interacts with a variety of proteins, including the regulatory RII α subunit of protein kinase A (PKA), defining myospryn as an A-kinase anchoring protein (AKAP), a scaffolding protein that recruits PKA to distinct subcellular locations to activate local signaling. Furthermore, myospryn forms a complex with the ryanodine receptor (RyR) calcium release channel at the SR and is involved in the organization of RyRs, suggesting its role in calcium handling. The aim of the project is to provide insights into the structural and functional role of myospryn in cardiac and skeletal muscle based on the analysis of myospryn knockout models using a multidisciplinary approach involving a variety of in vitro and in vivo techniques.

Main technical approaches

Analysis of mouse models using a variety of techniques, including cellular, molecular, biochemical, and histological methods; imaging techniques; and cardiac physiological studies in vivo.

Scientific references

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Type of contract

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