

P022 Generation of FRET-based probes that selectively monitor the RI or RII PKA compartments

V. Lissandron^{1,2}, **G. Di Benedetto**^{1,2}, **C. Conдини**^{2,3}
and M. Zaccolo^{1,2}

Dulbecco Telethon Institute (1) at the Venetian Institute of Molecular Medicine (2), Università degli Studi di Padova (3)

The second messenger cyclic adenosine monophosphate (cAMP) is the most important modulator of sympathetic control over cardiac contractility. Recent findings highlighted that in neonatal rat cardiac myocytes, β -adrenergic stimulation generates microdomains with increased concentration of cAMP in correspondence with the region of the transverse tubule/junctional sarcoplasmic reticulum membrane. The type II regulatory (R) subunit of Protein Kinase A (PKA) is functionally associated with these microdomains by the interaction with A Kinase Anchoring Proteins (AKAPs). Although evidence is emerging that PKAI and PKAII are not redundant and selectively mediate different downstream responses, little is known on the role these two isoforms play in cardiac myocytes. With the aim of exploring what are the cAMP dynamics in the RI vs the RII signalling domains in the heart, we have generated FRET-based sensors that selectively target the two compartments.