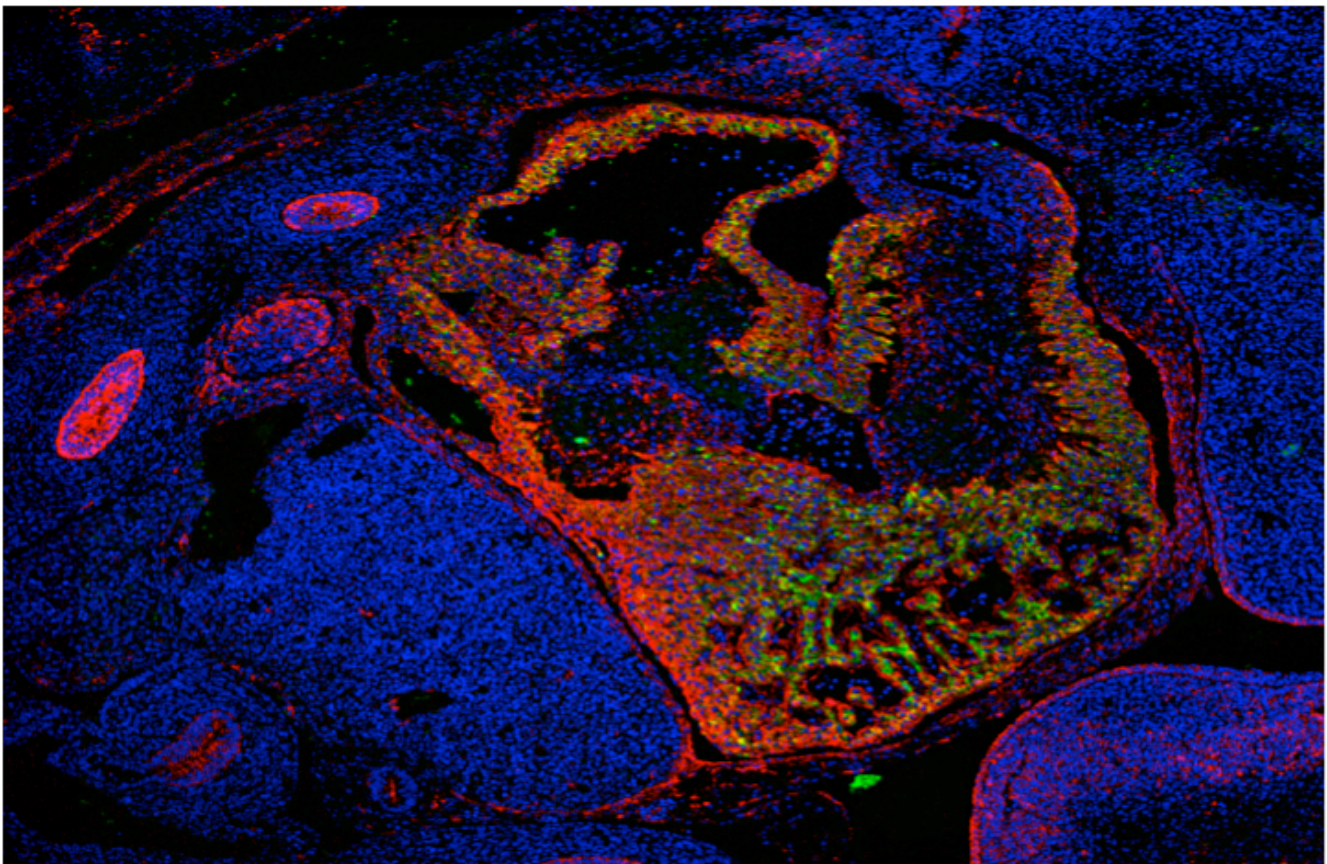




# mTOR dependent regulation of cellular growth

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Heart disease, especially heart failure is a major public health issue with a considerable burden for the health care system. Despite recent progress in understanding the pathophysiology, heart failure still carries a 5-year mortality that rivals most cancers. This talk focuses upon a novel fundamental molecular mechanism involving inhibition of pathological growth and blunting of senescence together with improving survival to maintain cardiac structure and function after myocardial infarction or pressure overload.

Cellular growth (increase in cell mass) is not a spontaneous response to nutrients and energy availability, but rather a highly regulated and controlled process integrated by mTOR dependent pathways. This includes initiation of gene transcription but also protein synthesis by controlling ribosomal functions. mTOR is a key regulation of protein synthesis. mTOR signaling also controls physiological as well as pathological myocardial growth and myocardial aging, but the molecular characterization of the different mTOR dependent growth control has not been achieved in detail.

In this presentation we will define the role of mTOR in myocardial growth. The mTOR dependent translational control of myocardial growth will be characterized and involved proteins or molecules will be discussed.