The beat goes on with AKAP18

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A protein, known as AKAP18, could help the heart to beat faster in response to adrenaline or noradrenaline, according to a study published online this week in EMBO reports.

The protein has a crucial role in correctly targeting protein kinase A (PKA) to a molecular complex that helps control the rate and strength of heart muscle contractions. This complex regulates the uptake of calcium into intracellular stores in the heart, allowing it to relax and prepare for its next contraction. PKA must be present for the complex to be activated and AKAP18 makes sure that it gets there.

Coronary artery disease leading to heart attacks, which can be acutely fatal or can induce heart failure resulting in death, is the biggest killer of men in the United States of America and Europe. With 10 million new cases of heart failure every year, approximately 30% of patients respond poorly to current treatments, with an ultimately fatal outcome. New drugs to improve survival from post-infarction heart failure are desperately needed. AKAP18 may prove to be an effective novel target in the fight to live beyond this deadly event.

Kjetil Taskén and co-workers hope that AKAP18 can be used as a potential drug target to improve the survival rate of patients with heart failure following heart-attacks, or sufferers of heritable heart disease. By targeting AKAP18, the team aims to specifically affect PKA and its regulatory complex when it is over-activated and help the heart to continue to function effectively.

Source: European Molecular Biology Organization