

Genetic variants in calcium calmodulin pathway in association with cardiovascular disease

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Propositions belonging to the thesis entitled

Genetic variants in calcium calmodulin pathway in association with cardiovascular disease: focus on the potential role of CaMKK1 in heart and vessel

By Sofia Beghi

1. Genetic variants in the calcium calmodulin pathway (NOS3, CaM3) are promising targets as biomarker for CVD. (this thesis)
2. CaMKK1 polymorphisms can be used as potential biomarker in the prediction, prognosis and follow up of patients with CVDs. (this thesis)
3. CaMKK1 influences activity of Ser-Thr kinases and thereby regulates phenotype switching of VSMCs (this thesis)
4. Cardiovascular disease (CVD) is not only linked to lifestyle but is also a complex genetic trait contributing to the observed phenotype. (Abbate et al, Clin Cases Miner Bone Metab 2008)
5. Gene expression studies identified patterns of different genes in cardiac hypertrophy, myocardial infarction, different forms of heart failure and even surveillance of cellular rejection in heart transplant recipients. (Dhingra et al, Trends Cardiovasc Med. 2017)
6. In heart and vessels, Ca^{2+} is not only essential for contraction and relaxation but also has a vital role as second messenger in signal transduction pathways (Cartwright et al., Sci China Life Sci. 2011)
7. Vascular smooth muscle cells (VSMCs) constitute the major cell type in the medial layer of arteries and are critical to maintain integrity of the arterial wall. As such, VSMCs participate in arterial wall remodeling and play an important role in atherosclerosis throughout all stages of disease (Hu et al, Immunol, 2019)
8. Prediction is very difficult, especially if it's about the future (Niels Bohr)
9. Somewhere, something incredible is waiting to be known (Carl Sagan)
10. Amor vincit omnia – Love conquers all (Publio Virgilio Marone)