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TITLE: Cardiac Stem Cells labeled with GFP protein to demonstrate engraftment in mouse model as an alternative potential cell based therapy for Cardiac Transplant Patients.

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ABSTRACT BODY: Cardiovascular disease remains the leading cause of death worldwide. Acute ischaemic injury and chronic cardiomyopathies lead to permanent loss of cardiac tissue and ultimately heart failure. Current therapies aim largely to attenuate the pathological remodeling that occurs after injury and to reduce risk factors for cardiovascular disease. The current studies in animal models indicate that transplantation of cardiac stem cells has the potential to improve the function of ventricular muscle after ischaemic injury. The cardiac stem cell pool utilized in this study is cKit, KDR, Sca-1(mice) Isl1 positive. The current experimental evidence suggests cardiac stem cells are able to engraft and differentiate into generation of new cardiac tissue. The predominant mechanisms of action of transplanted cardiac stem cells involve favorable physiological effects on injured myocardium. The adult heart possesses various pools of putative resident cardiac stem cells that can be isolated for therapy or manipulated in vivo to improve the healing of cardiac muscle after injury as evident from this study. The genetic and protein profiles of the engrafted tissue when compared to the normal tissue were comparable. This study reveals the properties and potential utilization of cardiac stem cell populations for cardiac repair and regeneration.

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