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## Furious Stem-Cell Technology To Cure Heart Cancer

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**Statement of the problem:** Cancer very seldom starts in the heart. But when it does, it can be deadly. An increased incidence of diagnosed primary cardiac tumours has been reported since the improvement of non-invasive imaging modalities. Heart cancer (primary cardiac tumour) arises in the heart which can be malignant and also benign. There are many types of tumour such as Lipoma, papillary fibroelastoma, rhabdomyoma etc.

**Methodologies and theoretical observation:** Cancerous (malignant) tumours that begin in the heart are most often sarcomas, a type of cancer that originates in the soft tissues of the body. Metastatic lesions are, by very definition, malignant in



nature and are far more commonly encountered than primary tumors. Metastasis to the heart from other primary cancers is 30 times more common. Only 25% of primary cardiac tumors are malignant, and, of these, 75% are sarcomas.

**Findings:** To cardiologists, the stem-cell technology is a blockbuster discovery, since the heart has been pegged as a disadvantaged organ in terms of injury, healing, and repair.

**Research on:** Mini-stem cell transplant with 'decorated' stem cells for heart repair Non-myeloablative stem cell transplant works through utilizing the donor stem cells, which builds an immune reaction against the residual cancer cells — hopefully eliminating the disease and preventing it from returning. The "decorating" cardiac stem cells with platelet Nano vesicles can increase the stem cells' ability to find and remain at the site of heart attack injury and enhance their effectiveness in treatment which could be applied for the same in case of cardiac tumours.

**Conclusion and significance:** Scientists have known that adult stem cells can be found in the heart. This has prompted numerous centers in many countries to pursue stem cell therapeutics in patients with heart attacks, heart failure, and even severe angina to repair muscle and improve blood supply, which can also attempt to cure heart cancer in deciduous way. The work is moving fast and furiously to make it as a standard part of cardiac care.

### **Recent publications:**

- 1. Stage-specific Effects of Bioactive Lipids on Human iPSC Cardiac Differentiation and Cardiomyocyte Proliferation Arun Sharma , Yuan Zhang, [...]Sean M. Wu Scientific Reports 8, 6618
- 2. Targeted repair of heart injury by stem cells fused with platelet nanovesicles Junnan Tang, Teng Su[...]Ke Cheng Nature Biomedical Engineering 2, 17–26
- 3. Biologically active constituents of the secretome of human W8B2+cardiac stem cells Shuai Nie, Xin Wang[...]Shiang Y. Lim Scientific Reports 8, 1579
- 4. Hypoxic Stress Decreases c-Myc Protein Stability in Cardiac Progenitor Cells Inducing Quiescence and Compromising Their Proliferative and Vasculogenic Potential Michael A. Bellio, Mariana T. Pinto[...]Claudia O. Rodrigues Scientific Reports 7, 9702

### Biography

Indhu Umapathi, an aspiring medical student is interested in global health and evaluation of various medical practices under her cover. She wants to pave way to new discoveries by learning about their main root cause rather than treating an occurring symptom. She has got her Bachelor of Arts in Psychology and also owns a certificate in Global health course from United States University, San Diego, which strengths her interest in various fields such as health literacy, health economy and inter professional education. She is also an active member of International Academy of Medical Specialist.

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