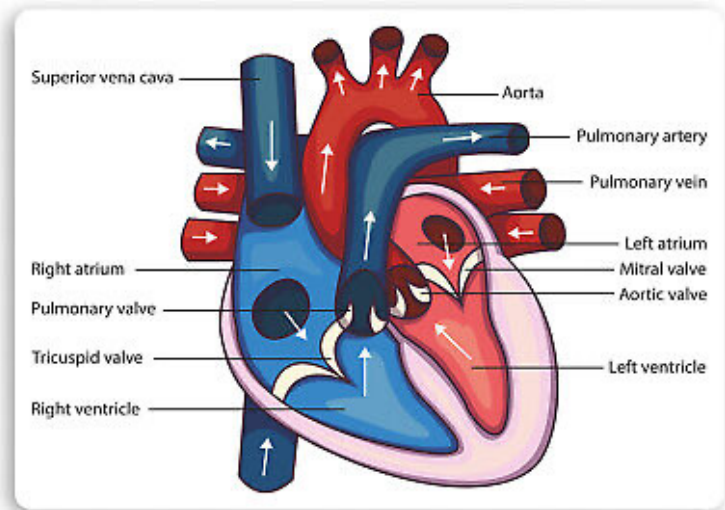
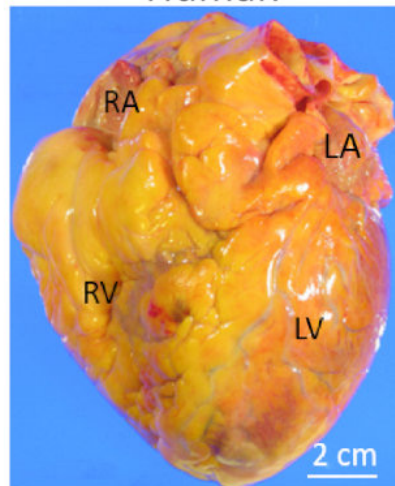


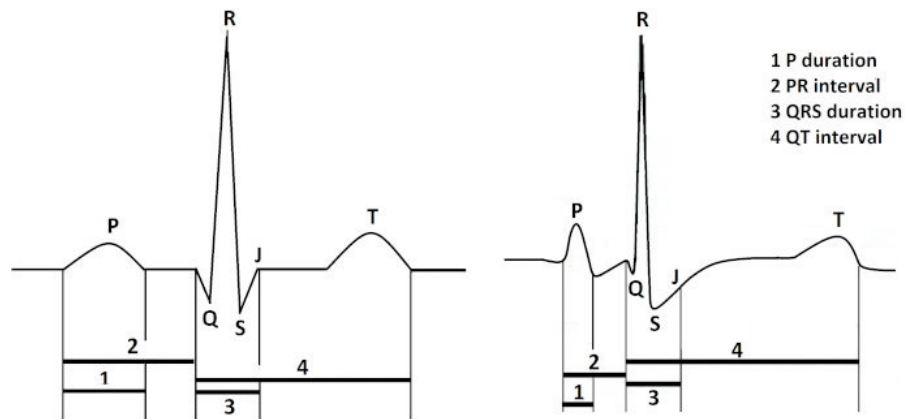
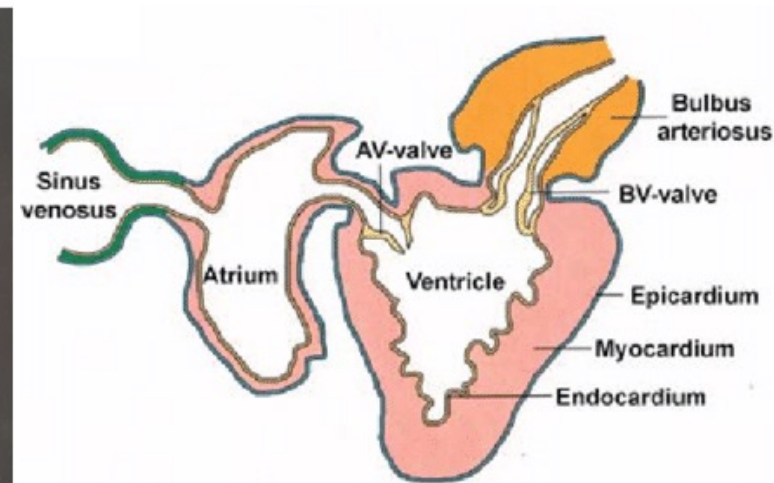
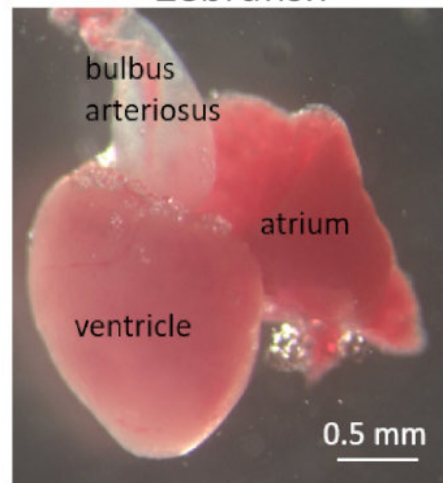
**Aula P11 – dias 17 e 22 maio: coração I**  
**(histologia cardíaca e cardiomiócitos induzidos)**



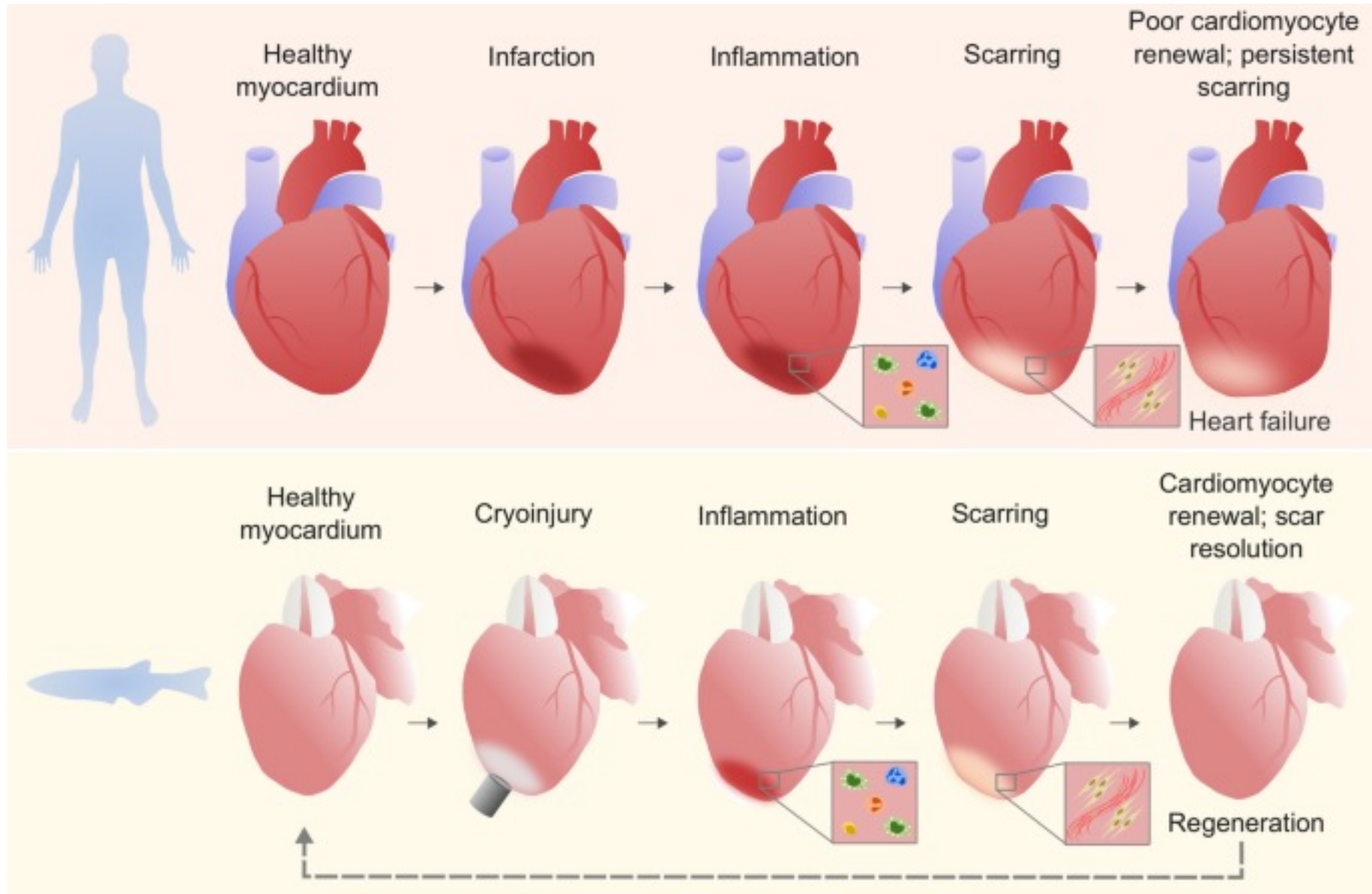
Human

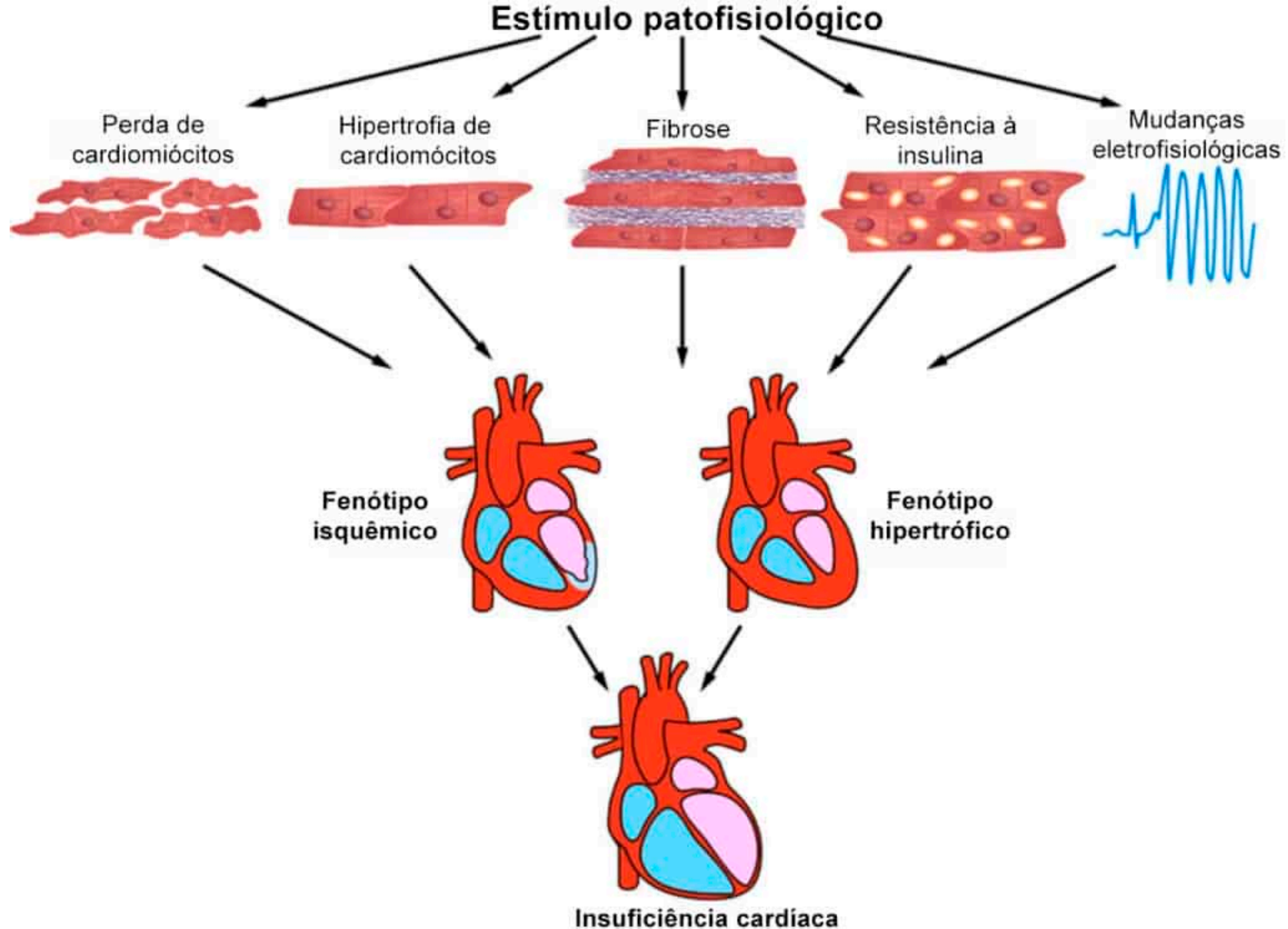


Zebrafish



# Regeneração do coração

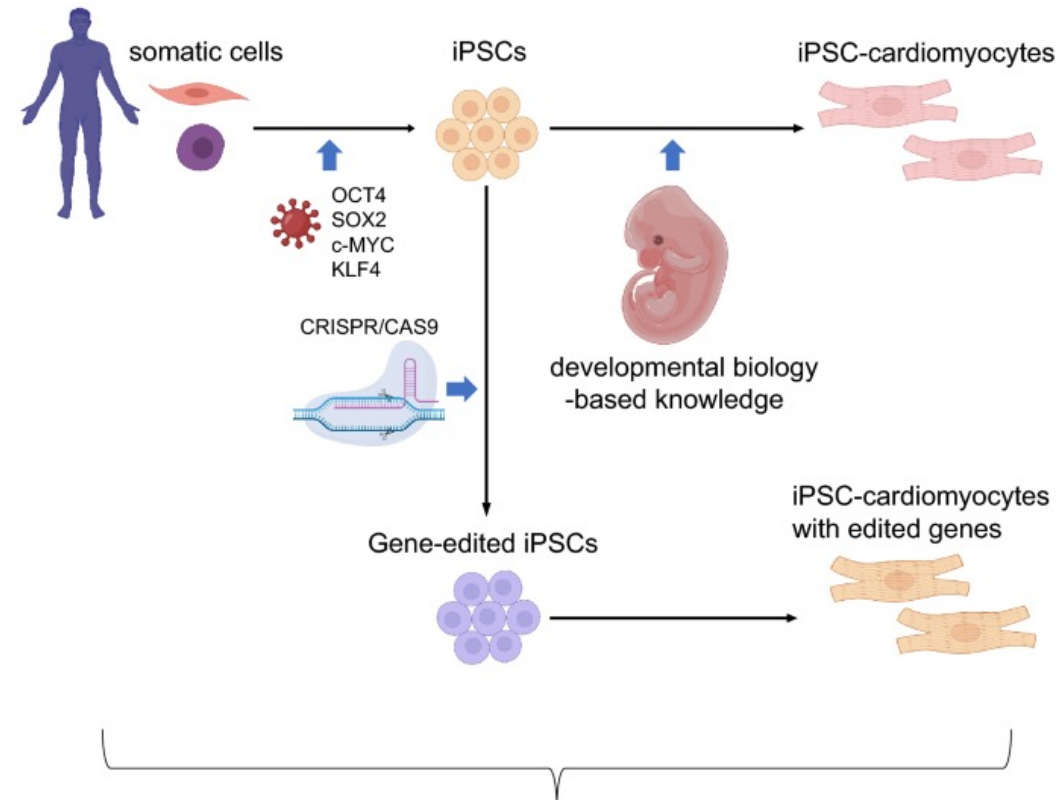




# Células estaminais induzidas para cardiomiócitos

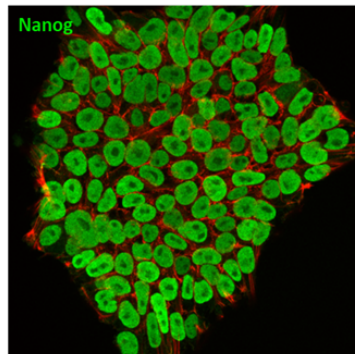
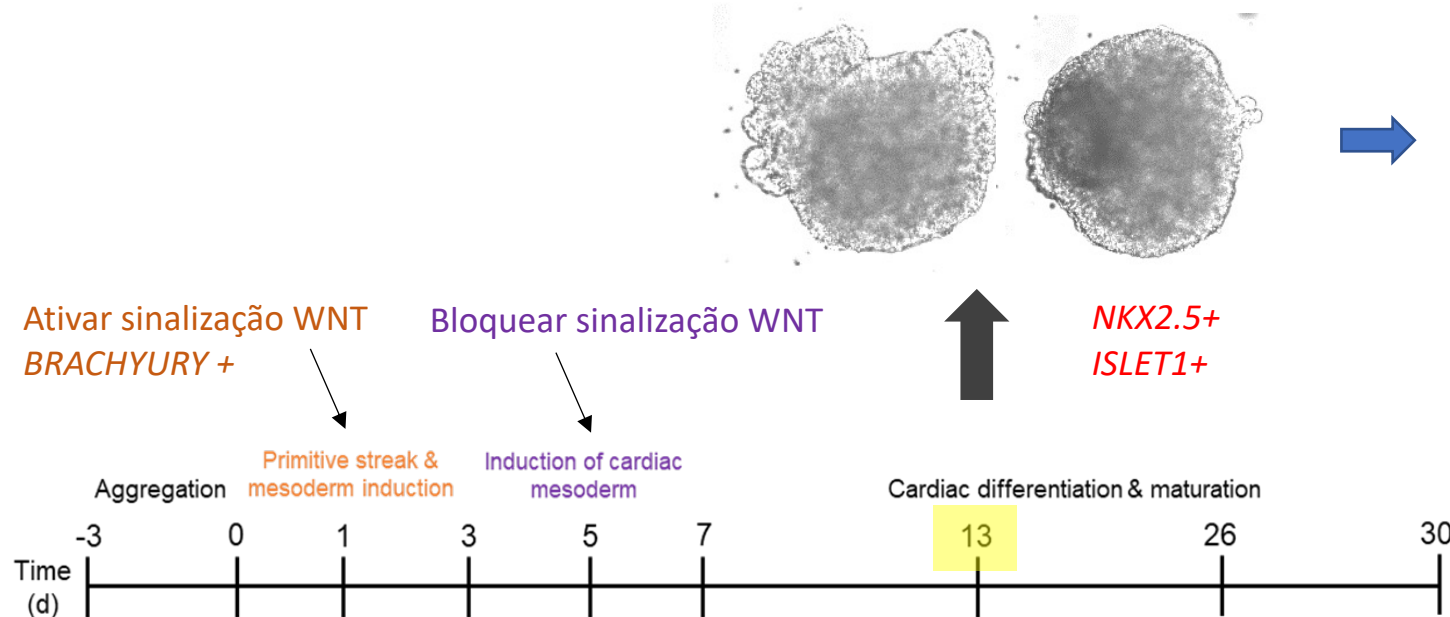
Shinya Yamanaka was awarded the 2012 Nobel Prize along with Sir [John Gurdon](#) "for the discovery that mature cells can be reprogrammed to become pluripotent.

In his Nobel seminar, Yamanaka cited the earlier seminal work of [Harold Weintraub](#) on the role of [myoblast determination protein 1](#) (MyoD) in reprogramming cell fate to a muscle lineage as an important precursor to the discovery of iPSCs



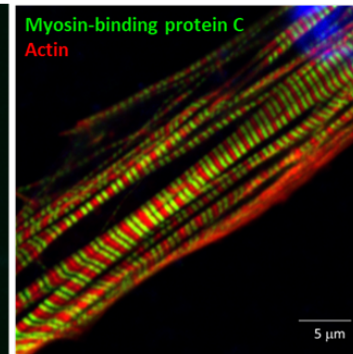
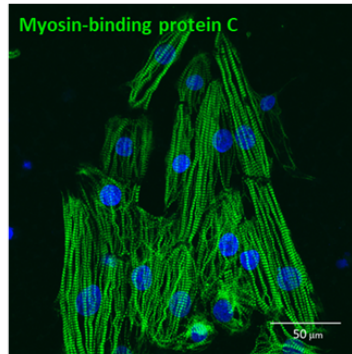
Para que servem estes cardiomiócitos?

# hiPSCs-CMs: Marta's project at IMM



hiPSCs

Differentiation  
30 days



hiPSCs-CMs

> PLoS One. 2011;6(8):e23657. doi: 10.1371/journal.pone.0023657. Epub 2011 Aug 18.

## Efficient and scalable purification of cardiomyocytes from human embryonic and induced pluripotent stem cells by VCAM1 surface expression

Hideki Uosaki<sup>1</sup>, Hiroyuki Fukushima, Ayako Takeuchi, Satoshi Matsuoka, Norio Nakatsuji, Shinya Yamanaka, Jun K Yamashita

Affiliations + expand

PMID: 21876760 PMID: PMC3158088 DOI: 10.1371/journal.pone.0023657

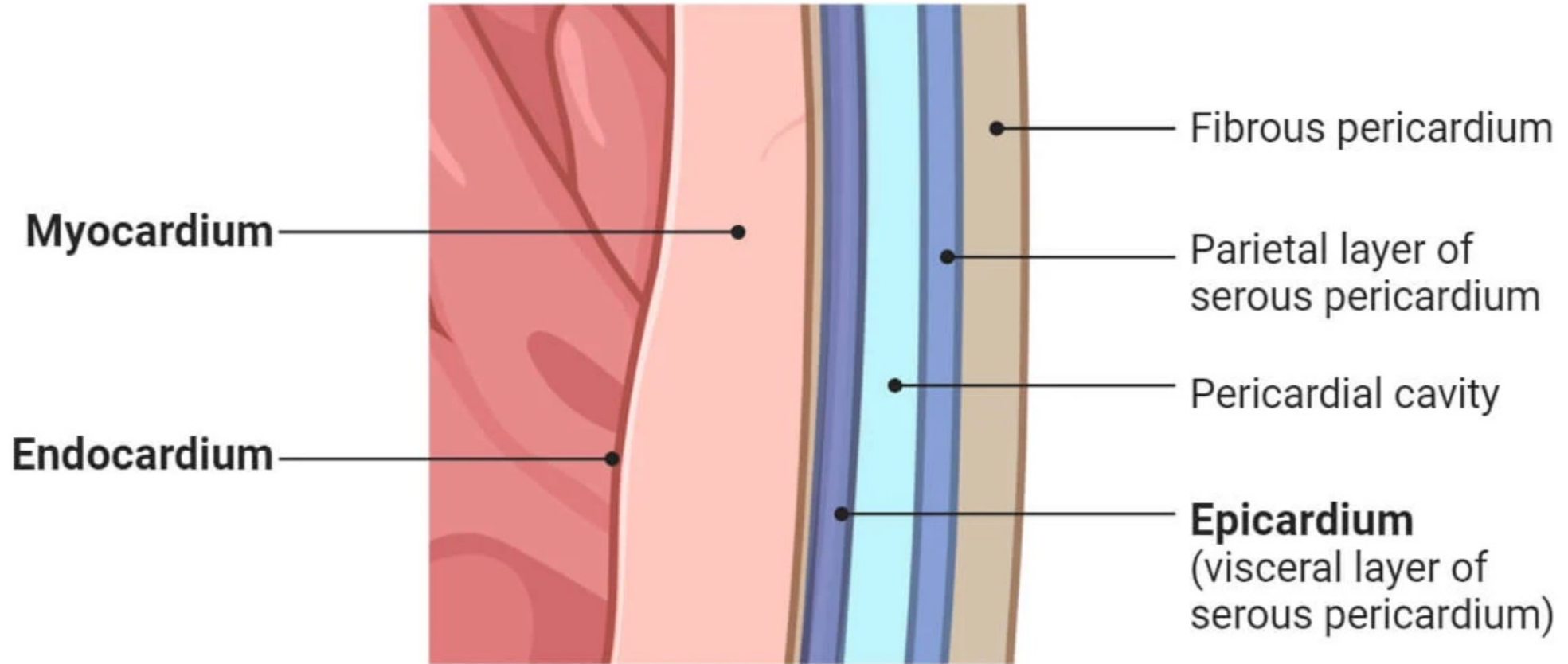
Fluorescent activated cell sorting (FACS)  
Using VCAM1 to enrich for cardiomyocytes

<https://youtu.be/PFeAhLJ1vL0>

Disease modelling in cardiomyopathies:

- Transcriptomics
- Morphology
- Calcium transients
- Metabolism
- Drug discovery

## Heart Layers



# Histología de músculo cardíaco

