

High-throughput Drug Screening for Hutchinson-Gilford Progeria Syndrome

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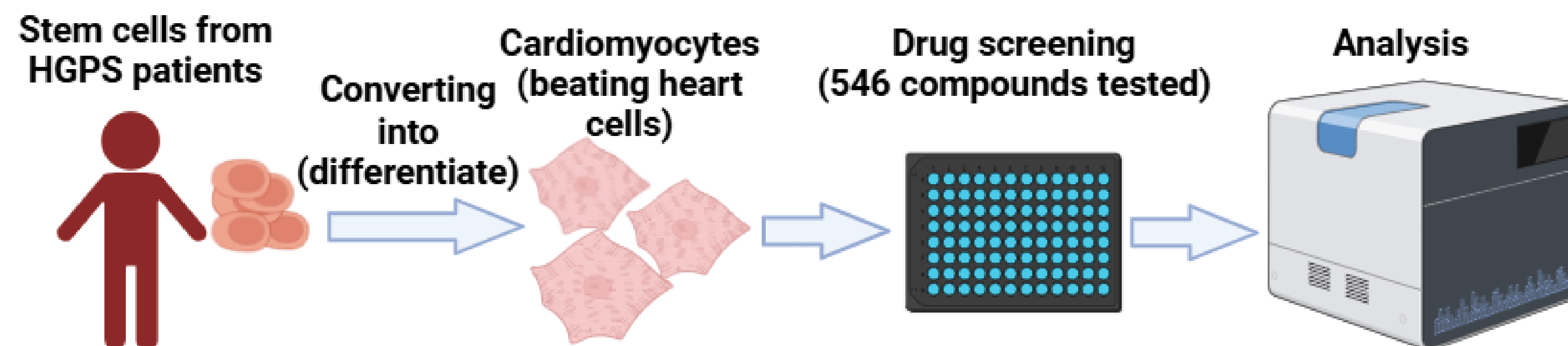
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Hutchinson-Gilford Progeria Syndrome (HGPS) is a deadly disorder without cure



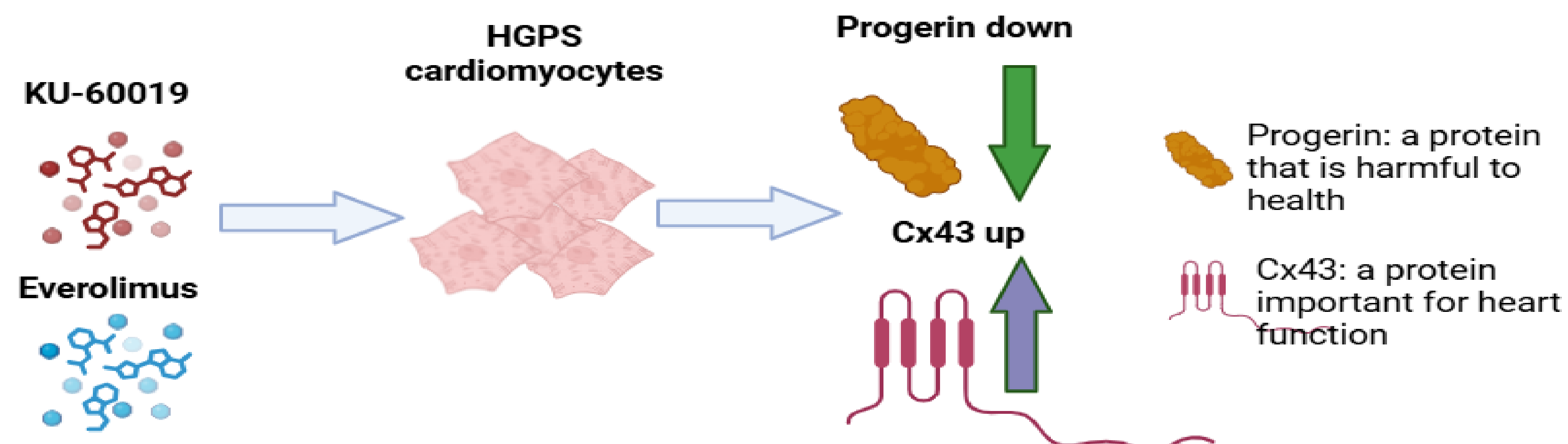
- Individuals with HGPS have an average life expectancy of 14.5 years old, and most HGPS patients die because of heart failure or heart attack.
- A toxic protein named progerin accumulates in the body of the HGPS patients, causing the organs to age rapidly.
- Cx43, a protein that controls the electrical signal communication between heart cells and beating rhythm of our hearts, is at very low level in HGPS patients' hearts.

Aim of our study: to find new drugs that improve the heart health in HGPS patients



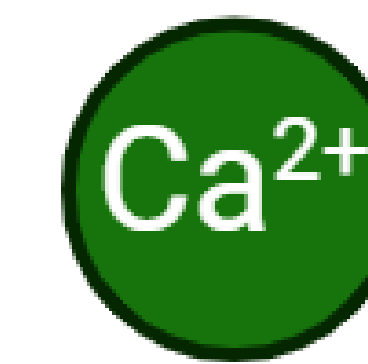
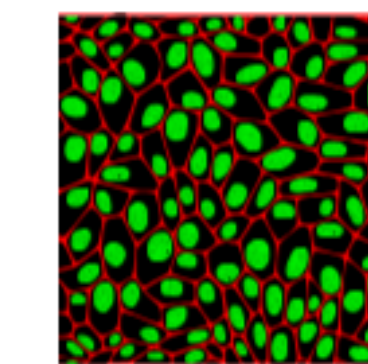
Study Design Flow Chart

Results: two potential drug compounds for HGPS were discovered in our lab



What's next?

To confirm that the cardiomyocytes beat better and more synchronously with our drug treatment



We will stain the cells with a green dye to measure their beating pattern.

Broader Impact

- During natural aging process, progerin also accumulates in our organs over time.
- Progerin is associated with aging-related cardiac diseases.
- In addition, as we age, Cx43 level decreases in our hearts, which may cause dysfunction/loss of function of heart tissues.
- Hence, the discoveries from our studies can be applied to elderly population in general as well!

