

FUNCTION OF THE UNIT

The visionary goal of CardioCreate is to develop therapeutic treatments for damaged heart tissue using regenerative medicine platforms. The breakthrough therapy research pursued by the company represents a critical and fundamental step toward realization of moving regenerative medicine therapeutic treatment from the bench to the bedside to not only treat, but to cure heart failure.

PURPOSE OF THE POSITION

Research for this position involves multiple innovative wet bench-related activities including the harvest, expansion and lentiviral-based enhancement of cardiac progenitor cells (CPCs) with Pim-1 and subsequent assessments involving industry-wide accepted tumorigenesis and genotoxicity assays. CardioCreate proposes the use of our patented Pim-1 enhanced CPCs (*CardioEnhancersTM*) to become the leading therapeutic treatment with the potential for restoration of cardiac function to improve not just lifespan but also quality of life in heart failure patients. The goal of this STTR Phase I proposal is to advance toward fulfillment of FDA mandated regulatory standard safety profile testing that will enable eventual IND approval for a Phase I Clinical Trial using *CardioEnhancersTM*.

SPECIFIC DUTIES

The following information is intended to be representative of the work performed by incumbents in this position and is not all-inclusive. The omission of a specific duty or responsibility will not preclude it from the position if the work is similar, related, or a logical extension of position responsibilities. Job descriptions may be changed at any time based on the needs of the department.

The technician will be responsible for execution of the following duties:

Aim 1. Safety studies of *CardioEnhancersTM* tumorigenic profile.

Aim 1.1 *CardioEnhancersTM* testing using *in vitro* immortalization assay.

Aim 1.2 Transcriptional profiling of *CardioEnhancersTM* to assess impact of Pim-1 upon gene expression.

Aim 2. Safety studies of Pim-1 overexpression to assess genotoxicity in *CardioEnhancersTM*.

Aim 2.1 *CardioEnhancersTM* genotoxic profile using the *in vitro* micronucleus test (IVMNT).

Aim 2.2 Profiling of *CardioEnhancersTM* for Anti-γH2A.X (phospho S¹³⁹) as an indicator of DNA double-strand breaks (DSBs) to assess genotoxic impact.

Milestones by end of proposed studies:

1. Complete tumorigenicity studies.
2. Complete genotoxicity studies.
3. Prepare STTR Phase II application based upon favorable safety profile of *CardioEnhancersTM*.

QUALIFICATIONS AND SPECIAL SKILLS

Knowledge and Abilities

- Ability to formulate experiments and analyze data in an independent manner.
- Thorough knowledge of different mice models of diseases in the heart.
- Ability to lead, motivate and supervise staff in the lab.
- The ability to communicate well, verbally and in written form.
- Interact effectively with co-workers.
- The ability to report to work on time.
- Ability to follow directions from a supervisor.
- Accept constructive criticism.
- Understand and follow posted work rules and procedures
- Ability to relate well to others within the lab environment.

- Highly motivated self-starter, with a high energy level and strong interpersonal skills.
- Well organized, ability to meet deadlines, detail oriented; possess good judgment and common sense.
- Demonstrate a high level of cross-cultural sensitivity.

Experience

- Prior experience in a research laboratory.

Education

- Undergraduate degree in a related field of study from a four-year college or university; graduate degree at MS or PhD level preferred.
- Co-author on at least one peer reviewed research publication

PREFERRED QUALIFICATIONS AND SPECIAL SKILLS

- Ability to troubleshoot, implement solutions, and work independently.
- Skill at data analysis, interpretation of findings, summarization of results and progress toward completion of milestones.
- Ability to communicate effectively in written form and prepare reports for funding agencies as well as publication of findings.

ACTIVITY REPORT – Technical research associate

Please respond to the following activities and factors. N/A = not applicable

Check the appropriated box for each of the following items that most accurately describe the extent of the specific activity by this employee on a daily basis.

PHYSICAL EFFORT

	N/A	Number of hours per day			
		1-2	3-4	5-6	7+
Sitting	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Standing	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Walking	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bending Over	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Crawling	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Climbing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reaching Overhead	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Crouching	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kneeling	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Balancing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pushing or Pulling	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lifting or Carrying:					
10 lbs or less	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11 to 25 lbs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26 to 50 lbs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51 to 75 lbs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
76 to 100 lbs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Over 100 lbs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Repetitive Use of Hands/Arms		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Repetitive Use of Legs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eye/Hand Coordination		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Driving Cars, Trucks, Forklifts, and other Equipment			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Being around Scientific Equipment and Machinery		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Walking on Uneven Ground		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

MENTAL EFFORT

N/A Number of hours per day 7+

 1-2 3-4 5-6

Directing Others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Writing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using Math/Calculations	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Talking	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Working at Various Tempos	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Concentrating Amid Distractions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Remembering Names	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Remembering Details	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Making Decisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Working Rapidly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Examining/Observing Details	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Discriminating Colors	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ENVIRONMENTAL FACTORS

	Number of hours per day				
	N/A	1-2	3-4	5-6	7+
Inside	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Outside	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Humid	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hazards	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
High Places	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hot	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cold	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dry	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wet	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Change of Temperature	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dirty	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dusty	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Odors	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Noisy	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Working with Others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Working Around Others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Working Alone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

My signature is an acknowledgment of reading and receiving a copy of this position description. Nothing in this position description is intended to effect or interfere with SDSU Research Foundation's At Will Employment Policy.

Employee Printed Name & Signature

Date

Signature below indicates position description is an accurate and correct statement of duties and responsibilities assigned to position

Supervisor Printed Name & Signature

Date