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SCHOOL OF MEDICINE

DEPARTMENTS OF PHARMACOLOGY AND MEDICINE
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To the Governing Board of the California Institute of Regenerative Medicine:

I am writing in regard to my CIRM 2.0 Inception Award application entitled "Reprogramming Human Stem Cells for Blood Cell Generation". I want to thank the reviewers for their positive feedback and enthusiasm for this proposal. I appreciate that the reviewers found our preliminary results 'strong' and thought the proposed work could 'directly translate into human applications,' and lead to 'an outstanding and potentially life-changing outcome'. **Importantly, the application received a median score of 85, with the majority of reviewers recommending it for funding.** The strength and significance of the proposal, along with its positive reviews and high score, have led me to write this letter and request that it be considered for a CIRM 2.0 Inception Award.

The goal of the proposal is to develop a human universal donor cell line that can be maintained in culture and differentiated to produce functional red blood cells when needed, with the long-range objective of providing an unlimited supply of red blood cells for transfusion. The rising world-wide shortage in blood supply has highlighted the need for a safe, unrestricted source of human blood cells. Many factors have contributed to this crisis: complex life-saving medical procedures, such as chemotherapy, organ transplants and heart surgeries that often require blood transfusions are becoming increasingly common, the aging population is living longer and, as a result, undergoing more procedures that involve blood transfusions, and finally, increased regulation of donor eligibility due to the identification of blood-transmissible diseases has led to reduced availability. The development of methods to produce human blood cells on demand would therefore fill a critical need with broad implications for saving lives in California.

Based on our search of archived CIRM funded grant information, we believe that this area has not received significant funding and thus continues to represent an area of great unmet clinical need. I should also note that much of our strong preliminary data was generated with an earlier grant from the Defense Advanced Research Projects Agency (DARPA). DARPA often provides short term support for research that is at the frontiers of science and technology and has relevance to national security, with the idea that the work can later be funded by more traditional granting sources. If this project were funded by CIRM moving forward, it would ensure that our prior work could be pursued to completion with support from the state of California.

I am deeply grateful to the board for considering this proposal for funding, and would be happy to provide any further information that may be needed.

Best wishes,

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