GWG QUEST Recommendations

Gil R Sambrano
Vice President of Portfolio Development and Review
California Institute for Regenerative Medicine

TRANSFORMING medicine lives futures

July 19, 2018

Funding Opportunities

New Idea → Single Product Candidate → Pre-IND Meeting or Equivalent → Approved Therapy

1-2/Year | 3/Year | 12/Year

CIRM Quest Discovery Program

Objective

The Quest Program promotes the discovery of promising new stem cell-based technologies that will be ready for translational studies within two years to ultimately improve patient care.

What qualifies for Quest?

Projects that propose a candidate:

- Therapeutic
- Diagnostic
- Medical device
- Tool

What qualifies for Quest?

- Stem/progenitor cell therapy
- Reprogrammed cell therapy
- Small molecule or biologic that stimulates, recruits or targets human endogenous stem cells or cancer stem cells
- Device, diagnostic or tool that:
  - Uses stem/progenitor cells
  - Addresses a critical bottleneck in the stem cell therapy field

Review Criteria

- ✓ Does the project hold the necessary significance and potential for impact?
- ✓ Is the rationale sound?
- ✓ Is the project well planned and designed?
- ✓ Is the project feasible?

Scoring System

- **Score of "85-100"**

  Recommended for funding, if funds are available

- **Score of "1-84"**

  Not recommended for funding

Applications are scored by all scientific members of the GWG with no conflict.

The **median** of all individual GWG scores determines final score.

GWG Recommendations

	Number of Apps	Total Applicant Request	Funds Available
Recommended for funding Score 85-100	14	$19,007,245	$10,000,000
Not recommended for funding Score 1-84	27		

For each award, the final award amount shall not exceed the amount approved by the ICOC Application Review Subcommittee and may be reduced contingent on CIRM's assessment of allowable costs and activities.

CIRM Team Recommendation

Fund top 7 ranking applications
(DISC2-11131 to DISC1-11175)

- Utilizes $9,440,137 out of the $10M available
- Captures the 4 applications with a unanimous GWG vote
- Includes 6 cell therapy and 1 biologic approach
- Captures 4 of 5 applications with previous CIRM funding

Overview of Recommended Applications

DISC2-11131

TITLE: Genetically Modified Hematopoietic Stem Cells for the Treatment of Danon Disease

INDICATION: Danon disease

PRODUCT TYPE: Cell therapy

APPROACH: Genetically-modified autologous blood stem cell transplant

DISC2-11157

TITLE: Preclinical Development of An HSC-Engineered Off-The-Shelf iNKT Cell Therapy for Cancer

INDICATION: Cancer

PRODUCT TYPE: Cell therapy

APPROACH: Genetically-modified allogeneic natural killer T cell transplant

DISC2-11036

TITLE: Non-viral reprogramming of the endogenous TCRα locus to direct stem memory T cells against shared neoantigens in malignant gliomas

INDICATION: Glioma

PRODUCT TYPE: Cell therapy

APPROACH: Genetically-modified T stem cell memory cells targeting glioma

DISC2-10979

TITLE: Universal Pluripotent Liver Failure Therapy (UPLiFT)

INDICATION: Liver-based metabolic diseases

PRODUCT TYPE: Cell therapy

APPROACH: Genetically-modified allogeneic hepatic progenitor cells

DISC2-11105

TITLE: Pluripotent stem cell-derived bladder epithelial progenitors for definitive cell replacement therapy of bladder cancer

INDICATION: Bladder cancer

PRODUCT TYPE: Cell therapy

APPROACH: hESC-derived bladder progenitor cells to replace pre-cancerous urothelium

DISC2-11192

TITLE: Mesenchymal stem cell extracellular vesicles as therapy for pulmonary fibrosis

INDICATION: Pulmonary fibrosis

PRODUCT TYPE: Biologic

APPROACH: Vesicles from mesenchymal stem cells with anti-fibrotic potential

DISC2-11175

TITLE: Therapeutic immune tolerant human islet-like organoids (HILOs) for Type 1 Diabetes

INDICATION: Type 1 diabetes

PRODUCT TYPE: Cell therapy

APPROACH: hESC-derived immune-tolerant islet-like organoids

DISC2-10973

TITLE: Small Molecule Proteostasis Regulators to Treat Photoreceptor Diseases

INDICATION: Photoreceptor diseases of the eye

PRODUCT TYPE: Small molecule

APPROACH: Screen of small molecule compounds to correct photoreceptor pathology

DISC2-11070

TITLE: Drug Development for Autism Spectrum Disorder Using Human Patient iPSCs

INDICATION: Autism

PRODUCT TYPE: Small molecule

APPROACH: Screen for drugs that increase MEF2C in patient-derived iPSCs

DISC2-11183

TITLE: A screen for drugs to protect against chemotherapy-induced hearing loss, using sensory hair cells derived by direct lineage reprogramming from hiPSCs

INDICATION: Hearing loss

PRODUCT TYPE: Small molecule screening tool

APPROACH: Screening tool for drugs that protect iPSC-derived sensory hair cells

DISC2-11199

TITLE: Modulation of the Wnt pathway to restore inner ear function

INDICATION: Hearing loss

PRODUCT TYPE: Biologic (protein)

APPROACH: Study Wnt agonists that can stimulate hair cell regeneration

DISC2-11109

TITLE: Regenerative Thymic Tissues as Curative Cell Therapy for Patients with 22q11 Deletion Syndrome

INDICATION: Chromosome 22q11 Deletion Syndrome

PRODUCT TYPE: Cell therapy

APPROACH: hPSC-derived thymus organoid transplant for immune system restoration

DISC2-11107

TITLE: Chimeric Antigen Receptor-Engineered Stem/Memory T Cells for the Treatment of Recurrent Ovarian Cancer

INDICATION: Ovarian cancer

PRODUCT TYPE: Cell therapy

APPROACH: CAR-T cell therapy that targets ovarian cancer

DISC2-11165

TITLE: Develop iPSC-derived microglia to treat progranulin-deficient Frontotemporal Dementia

INDICATION: Frontotemporal dementia

PRODUCT TYPE: Cell therapy

APPROACH: iPSC-derived microglia to treat progranulin deficiency