

Gladstone-CIRM Shared Resources Laboratory

SYLLABUS

CIRM SRL Stem Cell Techniques Courses

These are hands-on trainings that take place at the Gladstone Institutes in San Francisco. All courses are offered for a fee by the Gladstone-CIRM Shared Resources Laboratory. They are offered throughout the year upon request. Please reach out to stemcell-core@gladstone.ucsf.edu with questions and to schedule.

COURSE	MODULES AND DESCRIPTION
Basic iPSC culture (2 weeks)	Training will cover media preparation, plate coating, thawing, passaging (single cell and clump), and freezing of human iPSCs, along with sterile tissue culture techniques. Trainees will learn to distinguish iPSC morphology and ways to characterize iPSCs.
iPSC reprogramming (about 2 months):	Trainees will learn one of two reprogramming methods: 1) Reprogramming from PBMCs using episomal methods and 2) reprogramming from fibroblasts using RNA vectors. The training includes culture of somatic cells, transfection with vectors containing Yamanaka factors, plating and maintenance of transfected cells, identification of newly formed iPSC colonies, picking iPSC colonies onto Matrigel-coated plates, and training on expanding and freezing iPSCs for viable recovery.
iPSC Cardiac differentiation (3 weeks):	Training in directing iPSCs into cardiac lineage. Topics encompass iPSC quality control, differentiation media preparation, differentiation method and analysis by immunocytochemistry.
iPSC Colony picking (2 days)	Training in iPSC colony picking. Training covers for to manually pick iPSC colonies for gene editing, reprogramming, subcloning, etc.