



Stem Cell Reprogramming and Maintenance Reagent Kit

Item No. 44774

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TABLE OF CONTENTS

GENERAL INFORMATION	3	Materials Supplied
	3	Safety Data
	4	Precautions
	4	If You Have Problems
	4	Storage and Stability
	4	Materials Needed but Not Supplied
INTRODUCTION	5	Description
PREPARATION	6	Reagent Preparation
RESOURCES	7	Reference
	7	Notes
	7	Warranty and Limitation of Remedy

GENERAL INFORMATION

Materials Supplied

Item No.	Item Name	Quantity/Size	Storage
13122	CHIR99021	1 vial/5 mg	-20°C
13182	SU 5402	1 vial/1 mg	-20°C
11580	CI-1040	1 vial/5 mg	-20°C

If any of the items listed above are damaged or missing, please contact our Customer Service department at (800) 364-9897 or (734) 971-3335. We cannot accept any returns without prior authorization.



WARNING: THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Safety Data

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent *via* email to your institution.

Precautions

Please read these instructions carefully before beginning this assay.

If You Have Problems

Technical Service Contact Information

Phone: 888-526-5351 (USA and Canada only) or 734-975-3888

Email: techserv@caymanchem.com

In order for our staff to assist you quickly and efficiently, please be ready to supply the lot number of the kit (found on the outside of the box).

Storage and Stability

This kit will perform as specified if stored as directed in the **Materials Supplied** section (see page 3) and used before the expiration date indicated on the outside of the box.

Materials Needed But Not Supplied

1. Cell culture-grade DMSO

INTRODUCTION

Description

The components of this kit can be combined to produce the small molecule cocktail 3i. When mixed with an appropriate cell culture media, 3i enhances the maturation potential of fibroblast-derived induced pluripotent stem cells (iPSC) *via* inhibition of glycogen synthase kinase 3 β (GSK-3 β), FGFR1, and MEK by CHIR99021, SU 5402, and CI-1040, respectively.¹ When reprogrammed and maintained in media with 3i, iPSCs can be differentiated more efficiently into cells of all three germ lineages.

Each component in this kit is provided separately, and instructions are included to reconstitute these reagents for dilution into cell culture media. The kit is intended to supplement up to 3 L of culture media when using the indicated concentrations but provides the flexibility to optimize culture conditions to the user's required specifications. Prior to use, reagents must be stored as indicated at -20°C.

PREPARATION

Reagent Preparation

Preparation of Individual Stock Solutions

1. Prepare a 9 mM (3,000X) stock solution of CHIR99021 by adding 1.19 ml of sterile DMSO to the vial and vortexing until fully dissolved. The CHIR99021 solution may be diluted in cell culture media to a final concentration of 3 μ M.
2. Prepare a 2.4 mM (3,000X) stock solution of SU 5402 by adding 1.41 ml of sterile DMSO to the vial and vortexing until fully dissolved. The SU 5402 solution may be diluted in cell culture media to a final concentration of 0.8 μ M.
3. Prepare a 2.4 mM (3,000X) stock solution of CI-1040 by adding 4.35 ml of sterile DMSO to the vial and vortexing until fully dissolved. The CI-1040 solution may be diluted in cell culture media to a final concentration of 0.8 μ M.
4. Combination of equal volumes of the above three inhibitors yields a 1,000X stock solution, which can be diluted directly into cell culture media. Sterile filtering the final media formulation is recommended prior to use.

NOTE: Concentrated stock solutions may be stored at -20°C for up to one month, avoiding multiple freeze-thaw cycles. Sterile filtration may be required upon dilution in media.

RESOURCES

Reference

1. Nishihara, K., Shiga, T., Nakamura, E., *et al.* Induced pluripotent stem cells reprogrammed with three inhibitors show accelerated differentiation potentials with high levels of 2-cell stage marker expression. *Stem Cell Reports* **12**, 305-318 (2019).

NOTES

Warranty and Limitation of Remedy

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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