

Stem Cells

TOCRIS
a biotechne brand

Introduction

Stem Cells are considered by many to be the “future” of medicine, and thus stem cell research is a key focus in industry and academia. Small molecules that can manipulate and identify stem cells are highly sought after by the research community.

Tocris supplies small molecules that can be used at every stage of the stem cells workflow, being suitable for stem cell culture, differentiation, verification and reprogramming. Small molecules can be used for:

- **Stem Cell Culture:** Enhance self-renewal and increase expansion. Improve survival in stem cells undergoing cryopreservation.
- **Stem Cell Differentiation:** Induce neuronal, cardiac, hepatocyte and osteogenic differentiation.
- **Stem Cell Reprogramming:** Induce generation of iPSCs from somatic cells. Replace certain transcription factors in the reprogramming process.
- **Stem Cell Verification:** Verify phenotype and response to intervention using a range of agonists, antagonists and ion channel modulators.

Advantages of using small molecules for stem cell research include, a higher degree of temporal control, and the ability to obtain reversible effects. Small molecules can also be used in combination or at varying concentrations to “fine tune” the desired effect.

Some Key Products for Stem Cells

CHIR 99021 (#4423)

GSK-3 Inhibitor

- › Potent and highly selective GSK-3 inhibitor
- › Used in combination with tranylcypromine (#3852) to generate iPSCs, transduced by Oct4 and Kif4 only
- › Used in combination with PD 0325901 (#4192) to enhance ESC self-renewal

DAPT (#2634)

γ -secretase Inhibitor

- › Inhibits Notch signaling
- › Used to enhance neuronal differentiation from ESC-derived embryoid bodies

RepSox (#3742)

TGF- β 1 Inhibitor

- › Used for reprogramming somatic cells into iPSCs
- › Replaces Sox2 in the reprogramming process

SB 431542 (#1614)

TGF- β 1, ALK4 and ALK7 Inhibitor

- › Stimulates proliferation, differentiation and sheet formation of ESC-derived endothelial cells
- › Suitable for stem cell culture
- › Sold under licence from GSK

Y-27632 (#1254)

p160ROCK Inhibitor

- › Increases survival of human ESCs undergoing cryopreservation
- › Sold under licence from Mitsubishi Tanabe Pharma Corporation

Stem Cells Literature from Tocris



Stem Cells Review

This review provides an overview of the use of small molecules in the control of stem cell growth and differentiation. Key signaling pathways are highlighted, and the regulation of ES cell self-renewal and somatic cell reprogramming is discussed. Compounds available from Tocris are listed.

For a complete overview, please visit www.tocris.com/stemcells

An Intuitive Website

We add hundreds of new products to our range each year, and our website is the most up-to-date resource available. Updated weekly, our new products can be easily identified by the **New** symbol.

Products are organized by target, and each target comes with a wealth of relevant biological information. All product pages display information about the published biological activity of each product, along with technical data including solubility, storage conditions, and purity.

Our website also features handy online tools to help researchers easily calculate molarity and stock dilutions for each product. Frequently asked questions and a glossary of common scientific terms can also be found on our website, providing instant solutions for researchers' queries.

Why Buy From Tocris?

Fair Pricing

We believe that our pricing is the fairest on the market. When you buy products from Tocris you receive exceptional quality material, together with value for money; our products are typically sold in research quantities (10 mg and 50 mg).

Innovative Products

Our product range is continuously growing. We have a dedicated team of scientists working to quickly find the best, newest and most relevant chemical tools available, so we can be first to market with the latest research tools.

Ethical Approach

It is Tocris policy to never knowingly infringe patents. Instead, we work together with academic institutes and pharmaceutical companies to provide rewards to inventors. We also support open access drug discovery programs across the world.

Life Science Literature from Tocris

Tocris provides a wide range of scientific literature, including the following titles:

Product Guides & Listings



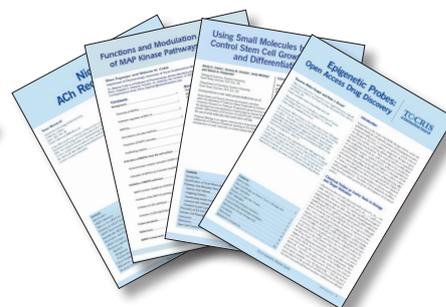
- Cancer Research
- Neurodegeneration
- Cardiovascular Research
- Pain Research

Life Science Posters



- Learning and Memory
- Programmed Cell Death
- Autophagy
- Peripheral Sensitization

Scientific Reviews



- Epigenetics
- Stem Cells
- MAPK Signaling
- Nicotinic ACh Receptors

For a complete selection of Tocris literature please visit www.tocris.com/literature.php

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