

Osteogenic Inducible Small Molecule Compound Kit-2 (Without Alizarin Red S and CPC)

CAT NO.: IK-OIN-2

Storage: 2-8°C, 2 years

Introduction

This Kit is designed by Solarbio specifically for the induction differentiation of osteoblasts. This package features 3 classic basic reagents (powder size). It aims to build a "one-stop service platform" for customers, saving time, effort and worry. All the products in the library have passed biosafety testing and product quality testing, and have stable and effective performance, little difference between batches, and good biological activity. Moreover, there have been a lot of literatures and multi-party verification, and the quality is reliable.

Kit Components

Reagent	Size	Storage
Reagent 1 Dexamethasone	5mg	2-8°C
Reagent 2 Vitamin C	10mg	2-8°C
Reagent 3 β -Glycerophosphate Sodium Salt Hydrate	500mg	2-8°C

Note:

- The components of this product are non-sterile, please filter sterilization before using reagents 1, 2 and 3.
- The prepared high concentration dexamethasone, Vitamin C, and β - glycerophosphate sodium stock solution is recommended to be filtered and sterilized. It is recommended to freeze the stock solution in several small portions to avoid repeated freezing and thawing (-20 °C, 6 months).
- This product is only used for scientific research experiments, not for clinical treatment.

Product Characteristics

- All products in this kit are packaged in powder form with a long shelf life, and can be freely prepared according to customer experimental needs.
- Flexible customization. Customers can flexibly add or remove compounds (such as Alizarin Red, CPC, antibiotic, etc.) according to experimental needs. Customization of specifications and packaging is also possible.
- Adequate inventory, spot delivery, high cost-effectiveness.

Protocols (only for reference)

1. Osteogenic Induction Differentiation (6-well plate as an example)

1.1 (optional) Gelatin Coated Culture Vessel

After the stem cell culture for a long time, it may appear to peel off the wall or float phenomenon, it is recommended to use 0.1% gelatin solution on the incubator. The dish is coated. Prepare a suitable culture vessel, take an appropriate amount of gelatin to cover the bottom, stand at 37°C for 30 min, absorb and dry before use.

1.2 Stem Cell Inoculation

The cells of logarithmic growth stage were inoculated into the coated culture vessel according to the cell density of 2×10^4 cells/cm², and cultured at 37°C and 5% CO₂ until the fusion degree was 60-70%. The supernatant was discarded, and 2mL osteogenic induction differentiation medium (containing dexamethasone, vitamin C and β-Glycerophosphate Sodium) was added to each well.

1.3 Induction of Cell Differentiation

The cells were cultured at 37°C and 5% CO₂ for about 14 to 28 days, and the fluid was changed every 2 to 3 days, and the morphological changes of cells were observed. According to the precipitation of calcium salts and the formation of calcium nodules, the time of termination of cell induction was determined and staining was performed.

Note: If the curling is serious, half-change solution (only 1mL of fresh osteogenic induction differentiation medium is added each time) or half-change solution in the early stage and the late stage can be used for induction.

2. Induction Evaluation

The effect of osteogenic staining was observed under microscope, and image collection and induction evaluation were performed. Upon successful induction, the calcic nodules appear red or orange-red after binding with alizarin red dye.

Note: The level of osteogenic differentiation of stem cells varies depending on cell type, cell donor source, culture conditions, cell generation, cell state, and differentiation time.

Related Literature

[1]. Zhang Z, et al. A drug-loaded composite coating to improve osteogenic and antibacterial properties of Zn-1Mg porous scaffolds as biodegradable bone implants. *Bioact Mater.* 2023 Apr 28;27:488-504.(IF: 18.9)

Related Products

IK-OIN-1 Osteogenic Inducible Small Molecule Compound Kit-1

IK-OIN-2 Osteogenic Inducible Small Molecule Compound Kit-2

IK-OIN-3 Osteogenic Inducible Small Molecule Compound Kit-3

IK-OIN-4 Osteogenic Inducible Small Molecule Compound Kit-4

IK-LIN-1 Lipogenic Induction Of Small Molecule Compound Kit

IK-CEA-1 Cell Activation Kit-1