



Alkaline Phosphatase (AP) Detection Kit (Ready-to-Use) - Red

Catalog Number: ST01002

Size: 50 tests

Alkaline Phosphatase (AP) Detection Kit is used to detect alkaline phosphatase activity in all types of pluripotent stem cells.

Product Description

Stemmera™ Alkaline Phosphatase Detection Kit is used to detect alkaline phosphatase activity in all types of pluripotent stem cells including embryonic stem cells, embryonic germ cells and induced pluripotent stem cells.

Unlike other immunostaining methods, which require specific equipment, Alkaline Phosphatase staining is the fastest and simplest method in characterizing the pluripotency of stem cells *in vitro*. Stemmera™ Alkaline Phosphatase Detection Kit (Ready-to-Use) - Red provides an efficient system in distinguishing between undifferentiated and differentiated stem cells by staining undifferentiated stem cells.

Product Component

Component	Size	Storage	Cat #
Pre-wash Buffer	2 x 25 ml	2-8°C	ST01002-S1
Fix Solution	30 ml	2-8°C	ST01002-S2
Wash Buffer	30 ml	2-8°C	ST01002-S3
Staining Solution I	30 ml	2-8°C	ST01002-S4
Staining Solution II	15 ml	2-8°C	ST01002-S5
Staining Solution III	15 ml	2-8°C	ST01002-S6
Stop Solution (optional)	30 ml	2-8°C	ST01002-S7

Storage and Handling

Stemmera™ Alkaline Phosphatase Detection Kit (Ready-to-Use) - Red is shipped with blue ice pack. Store all components of the kit at 2-8°C upon arrival and until the expiration dates indicated on the product label. Do not freeze. Protect from light for Staining Solution II and Staining Solution III. These reagents should remain stable for at least 6 months when stored as directed.

Additional Materials Required But Not Supplied

- 15 ml conical tubes
- Aluminum Foil
- Light microscope

Product Use

This product is intended for *in vitro* and research use only. Not intended for human or animal diagnostic or therapeutic uses.

Protocol

Preparation of AP substrate solution

For two wells of a 6-well plate, add 1 ml of Staining Solution I and 500 µl of Staining Solution II in a 15 ml conical tube and mix well. Add 500 µl of Staining Solution III into the mixture and incubate at room temperature for 5-10 minutes. Use substrate solution within an hour after preparation (precipitates may appear after mixing, which will not affect the staining result).

Note: As the Staining Solutions II and III are light sensitive, mixture should be prepared in either 15 ml amber conical tubes or 15 ml conical tubes wrapped with foil. Prepare sufficient fresh Alkaline Phosphatase Substrate Solution for the experiment only. Discard remaining mixture solutions.

AP staining for cultured cells

1. Aspirate the culture medium and wash the cells with 1 ml of Pre-wash Buffer.
2. Aspirate Pre-wash Buffer and fix cells with 1 ml of Fix Solution at room temperature for 2 minutes.
3. Aspirate the Fix Solution and wash cells with 1 ml of Wash Buffer.
4. Aspirate Wash Buffer, add 1 ml of freshly prepared AP substrate solution and incubate the cells in the dark at room temperature for 15-60 minutes.
Note: Wrap plate with foil or place plate in dark room or dark container.
5. Stop the reaction by gently aspirating the substrate solution, rinse the cells once with 1 ml of Stop Solution.

Note: Rinsing of cells with Stop Solution is optional.

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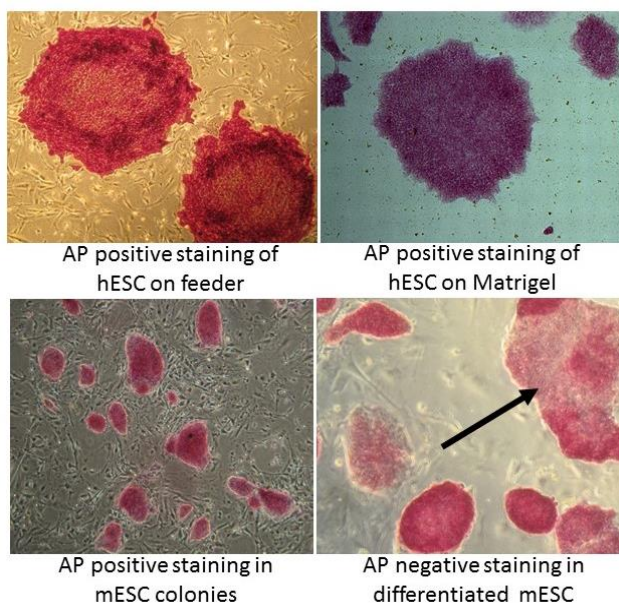
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6. Add 1 ml of Stop Solution into well, observe and count the red stained cell colonies (undifferentiated stem cells) versus colorless colonies (differentiated stem cells) using a microscope and take the pictures.
7. Store the plate at 2-8°C or discard the plate after taking the pictures.

Quality Control

This product is used to detect the pluripotency of both human and mouse ESCs/iPSCs, as well as other pluripotent stem cells. To ensure the quality, following images are representative results of staining for human and mouse ESCs/iPSCs detection.



Warranty and Limited Liability

Stemmera™ will not be liable for any damage caused by misuse, improper handling and storage of the product, non-compliance with precautions and procedures, and damages caused by events occurring after the product is released.

References

Chunli Zhao, Alfonso P. Farruggio, Christopher R. Bjornson etc. Recombinase-Mediated Reprogramming and Dystrophin Gene Addition in mdx Mouse Induced Pluripotent Stem Cells. *PLoS one* 2014, 9(4): 1-13.

Related Products

Product	Cat #	Size
Alkaline Phosphatase Detection Kit (Ready-to-Use) - Blue	ST01001	50 tests
Human ESCs/iPSCs Serum-/Feeder-Free Medium (hStemSFM)	ST02001	500 ml
Human ESCs/iPSCs Xeno-Free Medium (hStemXFM)	ST02002	500 ml
Non-Enzymatic Cell Dissociation Solution (1X)	ST03001	100 ml
Serum-Free Cryopreservation Solution for Human ESCs/iPSCs	ST03002	50 ml

Technical Support

Table 1 Suggested Volume per Well

Culture Vessel	24-well plate	12-well plate	6-well plate
Pre-wash Buffer	0.5 ml	1 ml	1 ml
Fix Solution	0.5 ml	0.5 ml	1 ml
Wash Buffer	0.5 ml	1 ml	1 ml
AP Staining Solution	0.5 ml	1 ml	1.5 ml
Stop Solution	0.5-1 ml	0.5-1 ml	1-2 ml
Reactions per Kit	60-120	30-60	15-40

For more product and technical information, please visit our website at www.stemmera.com.

For further assistance, email your inquiries to our Technical Support team at techsupport@stemmera.com.

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