Adipogenesis assay kit

Convenient method for the enhanced induction and detection of adipogenesis in the classic 3T3L-1 model.

The Adipogenesis Assay Kit provides all the reagents needed to induce and detect adipogenesis. Optimized Differentiation, Insulin, and Enhancer solutions ensure maximal adipocyte induction. The Adipogenesis Dye allows for visual confirmation of differentiation and can also be easily extracted allowing measurement using a spectrophotometer or microplate reader.

The ability to regulate the cell cycle and differentiation of adipocytes are key in the development and physiology of obesity. One of the most utilized models for the study of differentiation of fibroblast into adipocytes is the 3T3-L1 cell line. Differentiation of 3T3-L1 cells into adipocytes requires three primary components: insulin or insulin-like growth factor, dexamethasone (DXM), and 3-isobutyl-1-methylxanthine (IBMX). In addition, rosiglitazone, a thiazolidinedione that binds to PPARγ and sensitizes fat cells to insulin, enhances adipogenesis.

During the differentiation process, 3T3-L1 cells undergo a post-confluent mitosis, which occurs 24 hours after induction with insulin, DXM, and IBMX, followed by growth arrest. After growth arrest occurs, the cells are committed to becoming adipocytes and express late markers of differentiation at day 3, after induction. Growth arrest of the cells is a requirement for terminal adipocyte differentiation. After 5-7 days post-induction, the cell morphology changes from the elongated, fibroblastic cells to rounded cells, and lipid droplets begin to accumulate.

- Provides optimized reagents for adipocyte differentiation and subsequent colorimetric lipid oil detection
- Contains enhancer solution for the optimal induction of adipogenesis
- For drug-screening and testing agonists/antagonists of adipogenesis

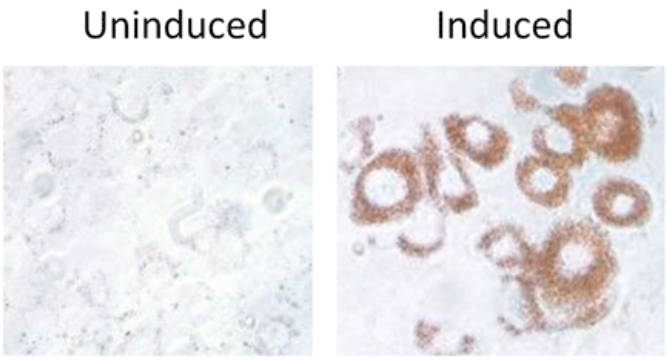
Ordering Information

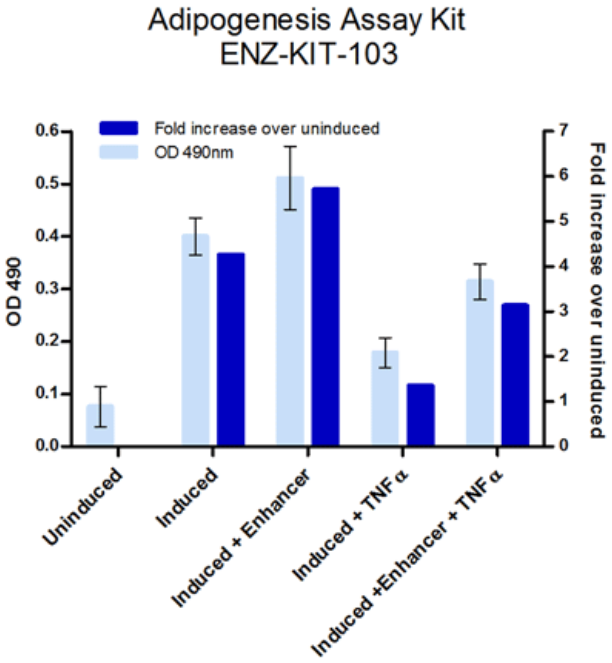
Order Online »

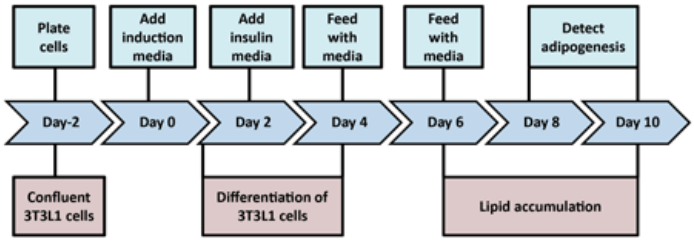
ENZ-KIT103-0005	5x24 wells

Manuals, SDS & CofA

View Online »


Uninduced
Induced


Adipogenesis Assay Kit
ENZ-KIT-103
Fold increase over uninduced
OD 490nm
OD 490
Fold increase over uninduced
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0
1
2
3
4
5
6
7
Uninduced
Induced
Induced + Enhancer
Induced + TNF α
Induced +Enhancer + TNF α


Plate cells
Add induction media
Add insulin media
Feed with media
Feed with media
Detect adipogenesis
Day-2
Day 0
Day 2
Day 4
Day 6
Day 8
Day 10
Confluent 3T3L1 cells
Differentiation of 3T3L1 cells
Lipid accumulation

Handling & Storage

Use/Stability	Store Differentiation Solution, Insulin Solution, and Enhancer Solution at -20°C. All other reagents can be stored at room temp.
Long Term Storage	-20°C
Shipping	Blue Ice

Regulatory Status

RUO - Research Use Only

Product Details

Application	Colorimetric detection
Application Notes	For the induction and colorimetric detection of adipogenesis.
Contents	1000x Differentiation Solution (Dexamethasone and IBMX) 1000x Insulin Solution 1000x Enhancer Solution (Rosiglitazone) 1x Cell Fixative 1x Adipogenesis Dye (Oil Red O) 1x Extraction Solution
Quantity	Contains enough reagents to conduct experiments for: 5 x 24 well plates or 225 cm^2 tissue culture plate surface area

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