Datasheet for ABIN2344831

CytoSelect™ 24-Well Cell Migration Assay (8 µm, Colorimetric Format)

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Overview

Quantity:	12 tests
Reactivity:	Mammalian
Application:	Cellular Assay (CA)

Product Details

Brand:	CytoSelect™
Sample Type:	Serum, Cell Samples
Analytical Method:	Quantitative
Detection Method:	Colorimetric
Characteristics:	CytoSelect™ Cell Migration Assay Kit utilizes polycarbonate membrane inserts (8 µm pore size) to assay the migratory properties of cells. This Trial Size kit contains sufficient reagents for the evaluation of 4 samples. The 8 µm pore size is optimal for epithelial and fibroblast cell migration. However, in the case of leukocyte chemotaxis, a smaller pore size (3 µm) is recommended.
Components:	1. 24-well Migration Plate : One 24-well plate containing 4 cell culture inserts (8 µm pore size) 2. Cell Stain Solution : One 4 mL bottle 3. Extraction Solution : One 4 mL bottle 4. Cotton Swabs : 40 each 5. Forceps : One each
Material not included:	1. Migratory cell lines 2. Cell culture medium 3. Serum free medium, such as DMEM containing 0.5 % BSA, 2 mM CaCl2 and 2 mM MgCl2 4. Cell culture incubator (37 °C, 5 % CO2 atmosphere)

Product Details

5. Light microscope
6. 96-well microtiter plate
7. Microtiter plate reader

Target Details

Background:	Cell migration is a highly integrated, multistep process that orchestrates embryonic morphogenesis, tissue repair and regeneration. It plays a pivotal role in the disease progression of cancer, mental retardation, atherosclerosis, and arthritis. The initial response of a cell to a migration-promoting agent is to polarize and extend protrusions in the direction of the attractant, these protrusions can consist of large, broad lamellipodia or spike-like filopodia. In either case, these protrusions are driven by actin polymerization and can be stabilized by extracellular matrix (ECM) adhesion or cell-cell interactions (via transmembrane receptors).

Application Details

Application Notes:	Optimal working dilution should be determined by the investigator.
Comment:	• Fully quantify chemotaxis with no manual cell counting • Measure chemotaxis in less than 6 hours with most cell types • Membrane inserts are uncoated to allow use with any chemoattractant
Protocol:	The CytoSelect™ Cell Migration Assay Kit contains polycarbonate membrane inserts (8 µm pore size) in a 24-well plate. The membrane serves as a barrier to discriminate migratory cells from non- migratory cells. Migratory cells are able to extend protrusions towards chemoattractants (via actin cytoskeleton reorganization) and ultimately pass through the pores of the polycarbonate membrane. Finally, the cells are removed from the top of the membrane and the migratory cells are stained and quantified.
Assay Procedure:	1. Under sterile conditions, allow the 24-well migration plate to warm up at room temperature for 10 minutes. 2. Prepare a cell suspension containing 0.5-1.0 x 106 cells/mL in serum free media. Agents that inhibit or stimulate cell migration can be added directly to the cell suspension. Note: Overnight starvation may be performed prior to running the assay 3. Add 500 µL of media containing 10 % fetal bovine serum or desired chemoattractant(s) to the lower well of the migration plate. 4. Add 300 µL of the cell suspension solution to the inside of each insert. 5. Incubate for 2-24 hours in a cell culture incubator. 6. Carefully aspirate the media from the inside of the insert. Wet the ends of 2-3 cotton-tipped swabs with water, flatten the ends of the swabs by pressing them against a clean hard surface, and gently swab the interior of the inserts to remove non-migratory cells. Take care

Application Details

not to puncture the polycarbonate membrane. Be sure to remove cells on the inside perimeter of the insert.
7. Transfer the insert to a clean well containing 400 µL of Cell Stain Solution and incubate for 10 minutes at room temperature.
8. Gently wash the stained inserts several times in a beaker of water. Allow the inserts to air dry.
9. (optional) Count migratory cells with a light microscope under high magnification objective, with at least three individual fields per insert.
10. Transfer each insert to an empty well, adding 200 µL of Extraction Solution per well, then incubating 10 minutes on an orbital shaker.
11. Transfer 100 µL from each sample to a 96-well microtiter plate and measure the OD 560nm in a plate reader. 4

Restrictions:	For Research Use only

Handling

Storage:	4 °C
Storage Comment:	Store all components at 4°C.

Publications

Product cited in:

Barui, Saha, Yakati, Chaudhuri: "Systemic Codelivery of a Homoserine Derived Ceramide Analogue and Curcumin to Tumor Vasculature Inhibits Mouse Tumor Growth." in: **Molecular pharmaceutics**, (2016) (PubMed).

Slusser-Nore, Larson-Casey, Zhang, Zhou, Somji, Garrett, Sens, Dunlevy: "SPARC Expression Is Selectively Suppressed in Tumor Initiating Urospheres Isolated from As+3- and Cd+2-Transformed Human Urothelial Cells (UROtsa) Stably Transfected with SPARC." in: **PLoS ONE**, Vol. 11, Issue 1, pp. e0147362, (2016) (PubMed).

Paris, Torre, Manzano, Cabañas, Flores, Vallet-Regí: "Decidua-derived mesenchymal stem cells as carriers of mesoporous silica nanoparticles. In vitro and in vivo evaluation on mammary tumors." in: **Acta biomaterialia**, Vol. 33, pp. 275-82, (2016) (PubMed).

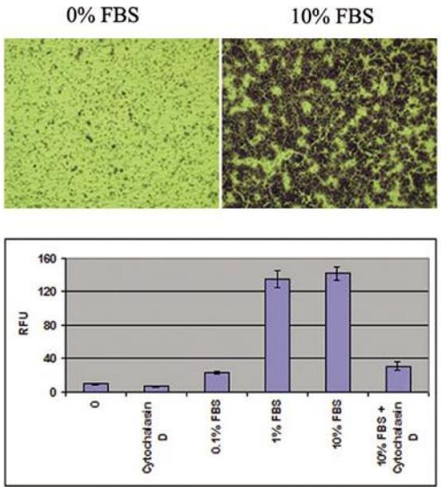
Oba, Nakahara, Hashimoto-Hachiya, Liu, Abe, Hagihara, Yokomizo, Furue: "CD10-Equipped Melanoma Cells Acquire Highly Potent Tumorigenic Activity: A Plausible Explanation of Their Significance for a Poor Prognosis." in: **PLoS ONE**, Vol. 11, Issue 2, pp. e0149285, (2016) (PubMed).

Publications

Yu, Jaskula-Sztul, Georgen, Aburjania, Somnay, Leverson, Sippel, Lloyd, Johnson, Chen: "Notch1 Signaling Regulates the Aggressiveness of Differentiated Thyroid Cancer and Inhibits SERPINE1 Expression." in: **Clinical cancer research : an official journal of the American Association for Cancer Research**, Vol. 22, Issue 14, pp. 3582-92, (2016) (PubMed).

There are more publications referencing this product on: Product page

Images



Cellular Assay

Image 1. Migration of Human Fibrosarcoma HT-1080 Cells. Cells were seeded at 30,000 cells per well of a 24-well plate and allowed to migrate toward 10% FBS for 4 hours in either the presence or absence of 2µM Cytochalasin D. Migratory cells on the bottom of the polycarbonate membrane were stained (top) and quantified in a fluorescence plate reader (bottom).