Cellular senescence live cell analysis assay

Simple assay to quantify senescence-associated β-galactosidase activity in live cells using flow cytometry

Assay kit that uses a fluorogenic substrate to measure SA-β-gal activity in live cells.

Normal primary cells proliferate in culture for a limited number of population doublings prior to undergoing terminal growth arrest and acquiring a senescent phenotype. This finite life span correlates with the age of the organism and with the life expectancy of the species from which the cells were obtained. The older the age or the shorter the life span, the less the ability of the cells to undergo population doubling.

Senescent cells are characterized by an irreversible G1 growth arrest involving the repression of genes that drive cell cycle progression and the upregulation of cell cycle inhibitors like $p16^{INK4a}$, p53, and its transcriptional target, $p21^{CIP1}$. They are resistant to mitogen induced proliferation, and assume a characteristic enlarged, flattened morphology. Research into the pathways that positively regulate senescence and ways cells bypass senescence is therefore critical in understanding carcinogenesis. Normal cells have several mechanisms in place to protect against uncontrolled proliferation and tumorigenesis.

Senescent cells show common biochemical markers such as expression of an acidic senescence-associated β-galactosidase (SA-β-gal) activity. While senescence has been characterized primarily in cultured cells, there is also evidence that it occurs in vivo. Cells expressing markers of senescence such as SA-β-gal have been identified in normal tissues.

Citations: 10 View Online »

- Quantitative and sensitive assay kit uses fluorogenic substrate to measure SA-β-gal activity
- Simple protocol doesn't require permeabilization and can be used in live cells

Ordering Information

Order Online »

ENZ-KIT130-0010	10 assays

Manuals, SDS & CofA

View Online »

Handling & Storage

Short Term Storage	-20°C
Long Term Storage	-20°C
Shipping	Blue Ice

Regulatory Status

RUO - Research Use Only

Product Details

Application	Flow Cytometry
Application Notes	For the study of cellular senescence in live cells.
Contents	Cell pretreatment solution (1000x) SA-β-gal Substrate (200x)
Quantity	10 assays in 35mm wells
UniProt ID	P16278

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