Cellular senescence activity assay

Highly reproducible SA-β-gal activity kit

The 96-well Cellular senescence assay kit provides an easy-to-use and efficient method to determine the cellular senescence by measuring SA-β-gal activity using a fluorometric substrate. This quantitative assay uses cell lysate for both SA-β-galactosidase activity determination and normalization of samples containing different cell numbers. Each kit provides sufficient quantities to perform up to 120 assays in a 96-well plate.

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; such that 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 G_1 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.

- Quantify SA-β-gal activity in a fluorescence plate reader
- Easy-to-use protocol with results in less than 90 minutes
- Fully compatible with all cell types

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ENZ-KIT129-0120	120 assays

Manuals, SDS & CofA View Online »

Handling & Storage

Handling	Store SA-β-gal substrate solution protected from light at -20°C. Store all other components at room temperature.
Shipping	Ambient Temperature

Regulatory Status

RUO - Research Use Only

Product Details

Application	Fluorescent detection, HTS
Application Notes	For the determination of cellular senescence by measuring SA-β-gal activity using a fluorometric substrate.
Contents	2X Cell lysis buffer 2X Reaction buffer SA-β-gal substrate (20X) Stop solution
UniProt ID	P16278

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