

[Open Peer Review on Qeios](#)

# Sister Chromatid Exchange Assay

National Cancer Institute

## Source

National Cancer Institute. *Sister Chromatid Exchange Assay*. NCI Thesaurus. Code C19561.

The sister chromatid exchange (SCE) assay detects the ability of a chemical mutagen to enhance the exchange of DNA between two sister chromatids of a duplicating chromosome. The test may be performed in vitro, using, for example, rodent or human cells, or in vivo using mammals, for example, rodents such as mice, rats and hamsters. Sister chromatid exchanges are reciprocal interchanges of the two chromatid arms within a single chromosome. These exchanges are visualized during the metaphase portion of the cell cycle and presumably require enzymatic incision, translocation and ligation of at least two DNA helices.