

## Anti-Cancer Antibiotics and Inhibitors in Cancer Research

Anthracyclines or anti-cancer agents are studied in anti-cancer research to determine the effects on inhibiting cancer growth, inducing apoptosis (cell death), or preventing metastasis. Anthracyclines operate through various mechanisms of actions to inhibit cancer cell growth and proliferation, especially in fast dividing cells.

### Antibiotics

Name	Product Number	Action
Actinomycin D	A1410, A9415, A4262	DNA intercalation
Actinomycin D Ready Made Solution	SBR00013	DNA intercalation
Bleomycin Sulfate	B2434	Free radical generation
Doxorubicin	D1515	DNA intercalation
Daunorubicin	D8809	Topoisomerase Inhibition
Epirubicin Hydrochloride	E9406	Free radical generation
Mitomycin C	M0503, M7949, M0440	DNA Alkylation

- DNA intercalation prevents DNA replication and transcription leading to cell cycle arrest and apoptosis.
- Free radical generation causes oxidative damage to DNA, proteins, and lipids contributing to apoptosis.
- Topoisomerase Inhibition leads to DNA breaks and the prevention of cancer cells from DNA replication.
- DNA Alkylation is the addition of alkyl groups to DNA bases leading to structural damage, mutations, and disruption replications

### Inhibitors

Name	Product Number	Action
Sotorasib	SBR00089	Inhibits the KRAS G12C mutation
Tazemetostat	SBR00098	Inhibits EZH2

- Inhibition of the KRAS G12C mutation locks the protein in an inactive state by binding to a specific pocket blocking cancer cell proliferation and survival.
- Inhibition of EZH2 reverses abnormal gene repression associated with cancer cell proliferation



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