Taking aim at mysterious DNA structures in the battle against cancer

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Designers of anti-cancer drugs are aiming their arrows at mysterious chunks of the genetic material DNA that may play a key role in preventing the growth and spread of cancer cells, according to an article in the current issue of *Chemical & Engineering News,* ACS' weekly newsmagazine.

C&EN Deputy Assistant Managing Editor Stu Borman notes that the DNA structures, which scientists term "quadruplexes" because they have four-sided structures, are a genre of folded DNA that may help control whether genes are switched on or off. Quadruplexes sometimes form near genes that foster the growth of cancer cells. Some scientists thus regard them as promising targets for developing new anti-cancer drugs.

Drugs that interact with quadruplexes could help kill cancer cells without harming healthy cells. In addition, they may side-step the serious problem of drug resistance, in which some drugs gradually lose their effectiveness against cancer. The article describes research on quadruplex-targeted drugs and explores the mysteries about how quadruplexes form, disappear, and work.

More information: "Promoter Quadruplexes", This story is available at pubs.acs.org/cen/science/87/8744sci1.html

Source: American Chemical Society (news : web)