



Role of DNA Hypermethylation in Cancer

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Recent studies on cancer-causing genes have shown the importance of promoter hypermethylation affecting different tumor suppressor genes such as cyclin dependent kinase inhibitor 2A (CDKN2A), E-cadherin (CDH1), human mismatch repair gene (MLH1), and retinoblastoma1 (Rb1).

Promoter hypermethylation is one example of epigenetic processes leading to repression of gene expression without altering DNA sequence per se and may serve as a promising biomarkers in lieu of other classical immunohistochemical based markers to stage the evolution of normal cells into cancerous ones. A number of research studies also show that some hypermethylated genes also correlate with aggressiveness and poor prognosis of different cancers.

There are several chemical agents acting as nucleotide analogues that have demethylating activities such as 5-azacytidine and 5-aza-2'-deoxycytidine. These agents are proven to inhibit the activity of DNA methyltransferase (an enzyme responsible for promoter methylation) and consequently to reactivate gene expression that is initially repressed due to methylation.

Key words: promoter hypermethylation, cancer, gene repression, tumor suppressor genes

CDK 2010; 37(4):254 - 8

DHEA in Anti-aging Management

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Dehydroepiandrosterone (DHEA) is a hormone synthesized primarily by the zona reticularis of the adrenal cortex. The level of DHEA in the body reaches its peak during young adulthood. Beside its function as a precursor for sex hormones, studies has shown various benefits such as improvement in cognitive function, increase in bone mass density, decrease of cardiovascular risks, weight loss, etc. Considering the benefits, DHEA is believed to be useful as a part of anti aging management. DHEA is now widely distributed as an over-the-counter supplement. Further research is necessary to analyze long term effects. Physician's monitoring is strongly recommended.

Keywords: DHEA, anti aging, supplement

CDK 2010; 37(4):259 - 263

DHEA Replacement Therapy for Anti Aging

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Dehydroepiandrosterone (DHEA) and dehydroepiandrosterone sulfate (DHEAS) are hormones naturally produced by human body. Level of DHEA peaks after delivery and in 20-24 year of age, and then decreased about 2-3% per year. Decreased level of the hormones declines several body's functions. Many researches look into the potential of maintaining the hormone level as anti-aging method.

Many researches showed that DHEA can improve testosterone and estradiol level, improves Bone Mineral Density (BMD) in certain bones and lowers osteoclast's activity. But other researches showed that DHEA has no effect on insulin, doesn't improve muscle mass and strength, and doesn't influence body composition.

DHEA replacement therapy has benefit in preventing aging by improving bone quality. But, further long-term

researches is still needed.

Keywords: DHEA, DHEA replacement therapy, anti-aging.

CDK 2010; 37(4):264 - 8

Role of Endometrial Stem Cell in the Pathogenesis of Endometriosis

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Endometriosis is characterized by the presence and growth of endometrial tissue (glands and stroma) outside the uterus. Endometriosis is a benign gynecologic condition which can cause a significant morbidity and occur in 6-10% women. Although endometriosis has been part of the clinical practice for almost a century, endometriosis pathogenesis remains an enigma.

There are direct evidence for the existence of adult stem/progenitor cells in human endometrium, which may have important roles in endometrium regeneration.

Recent studies suggest a new hypothesis of endometriosis pathogenesis : endometrial stem/progenitor cells are inappropriately shed during menstruation and reach the peritoneal cavity where they adhere and establish endometriotic implants.

More studies on the specific role of endometrium stem cells are needed to improve understanding on endometriosis pathogenesis. This fundamental studies on endometrial stem/progenitor cells will provide new insights into the pathogenesis of endometriosis.

CDK 2010; 37(4):269 - 273