NUCLEAR FACTOR of FIRST MILK and CANCER

Cutting down on cancer risk and treating it may involve the potential clinical applications of first milk proteins and peptides, say doctors writing in Current Medicinal Chemistry.

Colostrum, also known as first milk, contains therapeutic proteins and peptides that together appear to reverse changes in the signaling of the tumor microenvironment that enhance cancer spread.

In three Americans is likely to experience cancer. Colostrum, a nutrient-rich fluid produced by female mammals immediately after giving birth, is loaded with immune, growth and tissue repair factors with dozens of biologically active peptides and proteins that affect genes and cell signaling.

“The progression of cancer involves multiple changes” in cellular signaling to promote cell proliferation, the research team said.

CANCER IMMUNOTHERAPIES

Several colostrum-derived biologics, such as HAMLET (human α-lactalbuminmade lethal to tumor cells) and the human recombinant form of lactoferrin, already have “demonstrated activity.

Additional studies confirm cancer stopping activity.

CELL SIGNALLING

One of the smoking guns of cancer causation is nuclear factor kappab signaling, which increases internal inflammation that changes the ability of cancer cells to adhere to tissues and spread. Human colon cancer HT-29 cells were stimulated with interleukin (IL)-1beta with or without bovine colostrum. By inhibiting NF-kappab signaling in HT-29 cells, bovine colostrum reduced adhesion molecules and metastasis. “These data demonstrated that bovine colostrum might protect against intestinal epithelial cell metastasis.”

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FOOD FOR CHEMOTHERAPY

Colostrum should be considered as a front line food for chemotherapy patients as it “enhances the repair of rat intestinal mucosa damaged by methotrexate” and “ameliorates chemotherapy-induced mucositis.”

SINGLE VS MULTIPLE PEPTIDES

Until recently, most research has focused on the use of a single peptide for the treatment of a particular condition. There is now increasing evidence, however, that administration of a combination of many peptides can result in additive or synergistic activity. “For example, the coadministration of GH and IGF-I stimulates anabolism and the coadministration of bovine lactoferrin and EGF stimulate the growth of the rat intestinal epithelial cell line…Orally administered colostrum-derived preparations therefore appear to be an attractive therapeutic option because they contain many different growth factors in a formulation that provides inherent protection against proteolytic digestion.”

Immune-Tree first milking colostrum supplies peptides in first milk that never has its fat removed since the fatty acids protect the proteins as they go through the digestive process.

REFERENCES


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