

High levels of TRAIL protein in breast milk might contribute to anticancer activity

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The benefits of breast milk are well known, but why breastfeeding protects against various forms of cancer remains a mystery. A new study in the *Journal of Human Lactation* found high levels of cancer-fighting TNF-related apoptosis inducing ligand (TRAIL) in human milk, which might be one source of breast milk's anticancer activity.

Researchers took samples of colostrum, the first milk available to newborns, and of mature breast milk from [new mothers](#). Researchers then obtained samples of blood from healthy women, and various ready-to-feed infant formulas. The colostrum, mature breast milk, blood and formula were then all tested to measure their level of TRAIL. The researchers found that colostrum and breast milk contained 400- and 100-fold, respectively, higher levels of TRAIL than blood. No TRAIL was detected in the formula.

"The important role of breastfeeding in the prevention of cer-tain childhood cancers, such as lymphoblastic leukemia, Hodgkin's disease, and neuroblastoma, has been previously demonstrated," wrote the authors. "However, endogenous soluble TRAIL represents a strong candidate to explain the overall biological effect of breastfeeding against cancer."

Mothers chosen to participate in the study were eligible because they exhibited no signs of eclampsia, infection, or fever, and delivered healthy newborns at term.

The authors wrote, "To our knowledge, this is the first time that TRAIL has been measured in colostrum and human breast milk. This study has revealed much higher TRAIL concentrations in colostrum and [breast milk](#) compared to the levels of circulating serum TRAIL."

More information: The article entitled "Human Colostrum and Breast Milk Contain High Levels of TNF-related Apoptosis-Inducing Ligand (TRAIL)" by Riccardo Davanzo, MD, PhD; Giorgio Zauli, MD, PhD; Lorenzo Monasta, MSc, DSc; Liza Vecchi Brumatti, MSc; Maria Valentina Abate, MD; Giovanna Ventura, MD; Erika Rimondi, MSc, PhD; Paola Secchiero, MSc, PhD; and Sergio Demarini, MD from the *Journal of Human Lactation* is available free for a limited time at: jhl.sagepub.com/content/early/.../441071.full.pdf+html

Provided by SAGE Publications

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