

Vegetable compound could become ingredient to treating leukemia

December 12 2012

It looks like your mother was on to something when she said, "Eat your vegetables!" A concentrated form of a compound called sulforaphane found in <u>broccoli</u> and other cruciferous vegetables has been shown to reduce the number of acute lymphoblastic <u>leukemia cells</u> in the lab setting, said researchers at Baylor College of Medicine. The findings appear in the current edition of <u>PLOS ONE</u>.

"Acute lymphoblastic <u>leukemia</u> is a type of cancer of the <u>white blood</u> <u>cells</u> common in children," said Dr. Daniel Lacorazza, assistant professor of pathology & immunology. "There is about an 80 percent cure rate, but some children don't respond to treatment. For those cases, we are in need of alternative treatments."

Lacorazza and his colleagues focused on purified sulforaphane, a natural compound found in broccoli believed to have both preventive and therapeutic properties in solid tumors. Studies have shown that people who eat a diet rich in cruciferous vegetables have a lower risk of some cancers.

"There have not been definitive studies showing how this compound interacts with blood cancers," Lacorazza said.

To study how this compound would act on <u>acute lymphoblastic leukemia</u>, researchers, led by Dr. Koramit Suppipat, lead author of the study who performed this work while a clinical fellow in the Texas Children's Cancer and Hematology Centers, incubated human-derived leukemic



cell lines and primary lymphoblasts from pediatric patients with the compound. The cancer cells died while the healthy cells obtained from healthy donors were unaffected. Studies tested in pre-clinical mouse models showed similar results.

Lacorazza said the compound works by entering the cells and reacting with certain proteins. More studies will be needed, but researchers believe this compound could one day be used as a treatment option in combination with current therapies. They also are working to determine which proteins are affected by sulforaphane and how. This could identify a new treatment target that might be affected by other types of cancer cells as well.

"Sulforaphane is a natural product. However, what we used in this study is a concentrated purified form," said Lacorazza. "So while eating <u>cruciferous vegetables</u> is good for you, it will not have the same effect as what we saw in the lab."

Provided by Baylor College of Medicine

Citation: Vegetable compound could become ingredient to treating leukemia (2012, December 12) retrieved 5 May 2024 from <u>https://medicalxpress.com/news/2012-12-vegetable-compound-ingredient-leukemia.html</u>

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