

Got zinc? New zinc research suggests novel therapeutic targets

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Everyone knows that vitamins "from A to zinc" are important for good health. Now, a new research study in the August 2009 print issue of the *Journal of Leukocyte Biology* suggests that zinc may be pointing the way to new therapeutic targets for fighting infections. Specifically, scientists from Florida found that zinc not only supports healthy immune function, but increases activation of the cells (T cells) responsible for destroying viruses and bacteria.

"It has been shown that zinc supplementation significantly reduces the duration and severity of childhood diarrhea, lower respiratory infections, and incidence of malaria in zinc-deficient children," said report co-author, Robert Cousins, Ph.D., who also is the director of the Center for Nutritional Sciences within the Food Science and Human Nutrition Department at the University of Florida. "Age-related declines in immune function have also been related to zinc deficiency in the elderly."

Scientists administered either a zinc supplement or a placebo to healthy volunteers to assess the effects of zinc on T cell activation. After isolating the T cells from the blood, scientists then simulated infection in laboratory conditions. Results showed that T cells taken from the zinc-supplemented group had higher activation than those from the placebo group. Specifically, cell activation stimulated the zinc transporter in T cells called "ZIP8," which transports stored zinc into the cell cytoplasm where it then alters the expression of a T cell protein in a way needed to fight infections.



"As the debate over zinc supplementation in healthy individuals continues," said John Wherry, Ph.D., Deputy Editor of the <u>Journal of</u> <u>Leukocyte Biology</u>, "studies like this help shed light on how zinc may enhance the ability of our immune systems to fight off foreign invaders. Equally important, this work points toward new possible targets for entirely new drugs to help augment immune function and prevent or stop infections that might be resistant to traditional antibiotics."

<u>More information:</u> Tolunay B. Aydemir, Juan P. Liuzzi, Steve McClellan, and Robert J. Cousins Zinc transporter ZIP8 (SLC39A8) and <u>zinc</u> influence IFN- expression in activated human T cells. *J Leukoc Biol* 2009 86: 337. <u>www.jleukbio.org/cgi/content/abstract/86/2/337</u>

Source: Federation of American Societies for Experimental Biology (<u>news</u> : <u>web</u>)

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