

Studying the Effects of Congaplex® and Immuplex® on Immune Response in White Blood Cells and T Cells

Hanlon PR. (2009) Aqueous extracts from dietary supplements influence the production of inflammatory cytokines in immortalized and primary T lymphocytes. *BMC Complement Altern Med.* 14;9:51.



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Studying the Effects of Congaplex and Immuplex on Immune Response in White Blood Cells and T Cells

- › Cell-culture tests in immortal T cell lines
- › Cell-culture test in human white blood cells
- › Evaluated cellular cytokine response to a stimulant



Immuplex calmed T cell response.

Congaplex increased T cell signaling.

Results in mixed white blood cells showed a more adaptogenic response.

Health care professionals have used Congaplex for more than 50 years and Immuplex for more than 25. Additionally, a substantial amount of scientific evidence concludes that selenium, zinc, and vitamin E (found in Immuplex) are vital for immune health, as are vitamin A, vitamin C, and calcium (found in Congaplex).

Congaplex contains mushrooms used in traditional medicine, which in higher doses have been shown to modulate immune health. This supplement also provides plant ingredients that contain phytonutrients to support overall nutritional status (alfalfa, buckwheat).

Both supplements contain animal tissues and tissue extracts thought to support immune function based on the “like heals like” philosophy and the clinical beliefs advocated by Standard Process founder Dr. Royal Lee.

Using modern research tools, we designed a study to extend our knowledge about how these supplements function in biological systems.

Both supplements contain thymus Cytosol™ extract and veal bone PMG™ extract. Additionally, Immuplex contains liver, spleen, and thymus PMG™ extracts, as well as liver and spleen tissue. Congaplex contains bone, adrenal, and kidney ingredients.

Design

Using T lymphocytes (white blood cells that defend the body) from immature, immortalized cell lines and white blood cell mixtures called peripheral blood mononuclear cells (PBMCs) from human subjects, scientists examined the effect Congaplex and Immuplex had on cells presented with an immune challenge.

	In Immuplex			In Immuplex and Congaplex		
	Selenium	Zinc	E	A	C	Calcium
B cells				x		x
T cells			x	x		x
Monocytes			x			
Cytokine Production			x	x		
Mucosa				x	x	
Skin		x			x	
Enzyme Support		x				
Antioxidant Function	x		x		x	

Vitamin A: (Dietary Reference Intakes): National Research Council. 2001.

Vitamin A: Institute of Medicine

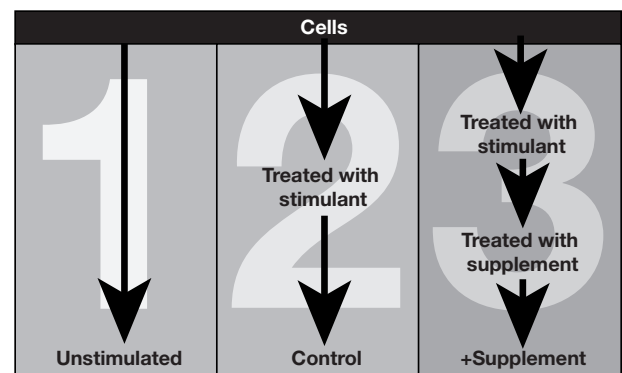
Vitamin C: *Br J Nutr.* 2007; 98 (Suppl 1):S29-S35.

Vitamin E: *Nat Rev Immunol.* 2008; 8(9):685-698.

Calcium: *Hum Immunol.* 2009; 70(9):678-685.

Zinc: Natural Standard Inc. Accessed August 17, 2009.

Selenium: *J Nutr.* 2003; 133(5):1457s-1459s.



Cells were treated with extracts of the supplements and then exposed to a substance that would provoke an immune response (antigen). The researchers then measured immune activity via the production of cytokines, proteins that regulate the action of the immune system. These chemicals are released by T cells and have a variety of different tasks. Some, like tumor necrosis factor alpha and interleukin 13, promote normal inflammatory response functions. Others, like interleukin 10, promote normal anti-inflammatory response functions, and still others contribute to normal immune cell regulation.

Results

In a 2009 publication, the scientists report statistically significant changes in cytokine levels after cells were treated with Congaplex or Immuplex. In T cell cultures, Immuplex tended to reduce T cell “discussions” and calmed cell signaling, while Congaplex tended to increase T cell signaling in a dose-dependent manner.

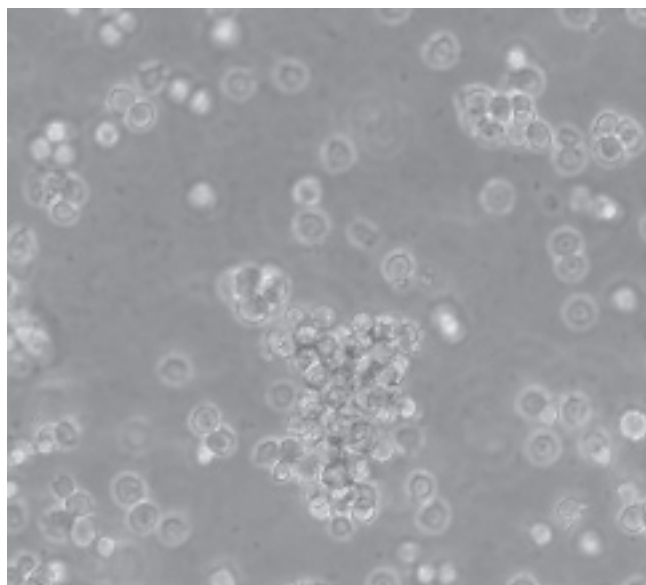
However, in the mix of human white blood cells, both supplements reacted similarly in their effect on interleukin 13 and interferon γ , although the changes seen with Congaplex were not statistically significant. This finding suggests that with the complexity of multiple immune signals from a mix of white blood cells, both Congaplex and Immuplex act in a more adaptogenic manner, meaning they work with the complex immune response instead of simply upregulating or downregulating cell signals.

Of course, cell culture is a very simplified way to study these effects and comes with limitations. Whether the same results would be observed in humans is not known. But it does provide a starting point for future investigation and interesting hypotheses related to the underlying mechanism of action for Congaplex and Immuplex.

Direction of Statistically Significant Change in Cytokine Level After Treatment With:

Cytokine	Congaplex		Immuplex		
	CEM	Jurkat	CEM	Jurkat	PBMCs
Tumor necrosis factor α		▲		▼	
Interleukin 13					▲
Interleukin 10	▲		▼		
Interleukin 2		▲		▼	
Interleukin 4					
Interleukin 8	▲	▲	▲	▲	
Granulocyte-macrophage colony-stimulating factor		▲	▼	▼	
Interferon γ					▼

Immature, immortalized T cell lines
Peripheral blood mononuclear cells



Jurkat cells—an immortalized line of T lymphocyte cells used to study a variety of cell responses, including those related to immune function (in cell culture)