

## GS2-6 Mechanisms on enhancement of Tcell proliferation by trichloroethylene ingestion from drinking water

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The number of allergic patients has been increasing rapidly in last a few decades. It was reported that the allergic reaction was enhanced by exposure with environmental pollutants such as diesel exhaust (DEPs) and formaldehyde. Trichloroethylene (TCE) is used widely. It has been a social problem that the groundwater has been contaminated by TCE.

We measured the proliferation rates and the phosphorelation levels of T cells receptor (TCR) signals of T cells exposed with TCE *in vitro*. BALB/c mice were given TCE dissolved in drinking water for 2 weeks, and immunized twice with ovalbumin (OVA) on the first day and a week after. On the final day, we collected mice splenocytes and measured proliferation rate of T cells and cytokine levels of the conditioned medium of T cells.

The proliferation rates and the phosphorelation levels of TCR signal of T cells were increased in the group treated with TCE *in vitro* and *in vivo*. Cytokine levels in the conditioned medium of T cells were increased in TCE exposure group.

These results suggest that TCE exposure causes the enhancement of T cell proliferation and cytokine production. Therefore, TCE ingestion from drinking water may lead to increase patients of allergic diseases.