Objective To determine the relationship between occupational exposure to benzene-toluene-xylene mixture (BTX) and IL-10, TNF and IL-12 production by peripheral blood mononuclear cells.

Methods Exposure was estimated in 54 workers from a paint company in Mexico City through BTX accumulated potential dose (BTX-APD). Two exposure groups were formed: high and low BTX-APD established with a cutoff point at ≥1.0 of BTX-APD, as a function of the geometric mean of the estimator’s value distribution and the higher agreement between BTX-APD ≥1.0 and the areas referred as using (or not) organic solvents in the work process. IL-10, TNF and IL-12 concentrations were measured with ELISA. Through multiple linear regression models, the production of each of the proposed cytokines and of the whole set was assessed.

Results Workers with high BTX-APD showed a significant reduction in TNF production (β = -1.196.0 pg/mL; p = 0.01); a reduction for IL-10 (β = -520.3; p = 0.13) and IL-12 (β = -843.3; p = 0.09) was also observed, although without statistical significance.

Conclusions TNF production assessed in workers with a high BTX-APD is lower than those with a low BTX-APD, but not in IL-10 and IL-12 production.