Glycine is formed of a carbon molecule linked to an amino group and carboxylic acid, have cytoprotective effect, antiinflammatory and immunomodulating. The inflammatory reaction is controlled by T-cells recognizing peptides of gluten, gliadin and glycine in the context of human leukocyte antigen (HLA) molecules DQ2 and HLA-DQ8, which induces increase in intraepithelial lymphocytes, villous atrophy and hyperplasia of the crypts. The functional food bioactive organic compounds shows that play beneficial effects to health and reduce disease risk. In this work we evaluated the action of glycine in phagocytosis, superoxide anion release and microbicidal activity in the activation of cells in colostrum when adsorbed to polyethylene glycol. Milk samples were obtained from 68 normal postpartum women enrolled in the health units of the Herons Bar-MT. Obtaining phagocytes was performed by density gradient. To verify that the cells are activated was analyzed superoxide anion release, phagocytosis and microbicidal activity, the results were subjected to analysis of variance and were significant p <0.05. It was observed that the colostrum of mononuclear phagocytes in the presence of polyethylene glycol adsorbed glycine modulates the release of superoxide anion, and phagocytosis, microbicidal activity. These results allow us to infer the adsorption of polyethylene glycol to glycine modulates the cellular activity of phagocytes of human colostrum.