Chitosan is a chitin derivate biomaterial, and has been reported play a significant role in tissue repair. Bone defect repair involves osteoclasts. These cells function both in physiological and pathological conditions. During its activity, osteoclast produces TRAP and ROS. **Aim of study:** To analyze the effect of chitosan on osteoclast proliferation, bone resorption and radical oxygen product (ROS). **Material and methods:** We did a primary culture from mouse bone marrow (5 days, 370C, 5%), then identified osteoclast with TRAP. Cell proliferation and TRAP products were observed by MTT assay and TRAP kit and both assays were analyzed by ELISA reader (490 nm). ROS product was measured by MDA assay (mmol/ml) on 530 nm wave length. **Statistical analysis:** ANOVA one-way for MTT assay, t Test for MDA assay, (p<0.05). Qualitative analysis was done for bone resorption (score 1-3). Results: MTT, TRAP and MDA ODs of treatment group were significantly different than the control group (p<0.005). The score of bone resorption of treatment group is higher than the control group. **Summary:** Chitosan inhibits osteoclast proliferation, ROS products and bone resorption.