Prostate cancer is one of the commonest malignances in men. It is known that imbalance in androgen-estrogen balance in men might be a causative factor in carcinogenesis. There is known that diet and life style might contribute to human health. Thus, we would like to evaluate the effect of zearalenone (ZEA)- fungal mycotoxin present in cereals on prostate carcinogenesis. Many animal studies showed that ZEA has an influence on animal fertility and induce oxidative stress in reproductive cells. Our preliminary results carried out on prostate cancerPC3 cell line showed that ZEA has similar effect to estrogen and this effect involves both pro and anty-proliferating characteristics of ZEA. **The aim of this project is to assess molecular mechanism associated with estrogen receptors, through which ZEA might potentially modulates the process of carcinogenesis.** There is no literature data presenting direct role of ZEA in prostate cancer, thus our results will show if ZEA has any influence on prostate cell metabolism, oxidative stress and invasiveness and if those effects are associated with estrogen receptors.