Naimeh Najafi, Ali-Reza Ahmadi, Ramin Hosseini, Shokoofeh Golkhoo. (2011). Gamma irradiation as a useful tool for the isolation of astaxanthin-overproducing mutant strains of *Phaffia rhodozyma*. *Canadian journal of microbiology*,57(9), 730-734.

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Astaxanthin is a carotenoid pigment responsible for the red color of the flesh of many marine animals. There is an increasing interest in the use of astaxanthin in aquaculture, chemical, pharmaceutical, and alimentary industries. *Phaffia rhodozyma* has been identified as the best biological source of astaxanthin. Mutagenesis was carried out using different doses of gamma irradiation (1.0, 2.0, 3.0, 3.5, 4.0, 4.5, 5.0, 5.5, 6.0, and 7.0 kGy), and 10 mutant colonies (Gam1–Gam10) were obtained. Highly pigmented mutant strains produced astaxanthin at approximately 15 887.5 µg/L dry mass of yeast, whereas the parental strain produced it at 1061.64 µg/g dry mass of yeast. In the thin-layer chromatography analysis, *P. rhodozyma* JH-82 and Gam1 mutant strain produced the same retention factor (R_f) values, but Gam1 showed a higher astaxanthin content than JH-82.