

Research article

***Moringa oleifera* inhibited the toxicity induced by administration of Tamoxifen in rats: using ultraviolet-visible and fluorescence spectroscopy investigations**

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Abstract

Tamoxifen (TMX) has treated different stages of the breast cancer; although it has several side effects. This study aimed to investigate the influence of *Moringa oleifera* aqueous extract (MOE) on the blood serum of rats injected with TMX through the ultraviolet-visible and fluorescence spectroscopy techniques, for optimizing the TMX therapy. The absorption spectra of blood serum were measured using a UV-VIS double beam spectrophotometer over wavelength range 200–500 nm. The fluorescence spectra were measured over wavelength range of 200-700 nm and with wavelength excitations at 278, 539, and 576 nm. The absorbance peak of TMX was found at 278 nm, which was higher compared to the healthy control, and the MOE extract supplementation decreased the absorbance peak to be nearly close to the healthy control. The fluorescent excitations of the blood serum were measured at 278, 539, and 576 nm; the fluorescence intensity of the TMX was significantly higher compared with the healthy control, however, the administration of MOE extract in combination with TMX restored the fluorescent peak of TMX closely to the healthy control. This study suggests that the administration of MOE extract in combination with TMX in the rats may promote the antioxidant defense mechanism, which in turn inhibits the generation of different reactive oxygen species, ameliorated the TMX-induced blood serum constituent's deterioration.