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## Recent Photocatalytic Degradation Studies of Alprazolam

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**Abstract**

The degradation studies helps in determination of the impurities which are produced due to the degradation of pharmaceuticals and also helps in stability studies, impurity profiling or toxicological studies of pharmaceutical drug or isolation or toxicological determination particular impurity. Different type of methods used in the degradation of the different pharmaceutical drugs, in the review we reported the recent degradation studies on the Alprazolam (ALP) which are photo-Fenton degradation, magnesium (Mg) doped zinc oxide (ZnO) nanoparticles, acidic Sol-gel synthesized titanium dioxide (TiO<sub>2</sub>) nanoparticles and brookite type TiO<sub>2</sub> nanoparticles. In the most of degradation methods the degradation performed by the use of photocatalyst or irradiations, because the ALP is the light sensitive drug that degrades itself in the presence of light. The ALP degradation reactions involve the removal of phenyl-group and the opening of the 7-membered ring found mostly every study. About fifteen photocatalytic degradation products has identified by the photo-Fenton degradation and photodegradation product, triazolaminoquinoline most found in the most of degradation methods. The photodegradation products are identified by LC- MS, UV spectroscopy, IR spectroscopy and NMR spectroscopy.

**Keywords:** - Alprazolam, photodegradation, Impurities, Triazolaminoquinoline, Nanoparticles

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