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Comparison of the anticancer effects of the histone deacetylase inhibitor panobinostat with doxorubicin on pre-clinical models of hepatocellular carcinoma

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Background & Aim: Panobinostat is the most recent histone deacetylase inhibitor approved for treatment of relapsed and recurrent multiple myeloma. In this study, we compare its effects with doxorubicin which is already used for trans-arterial chemoembolization of hepatocellular carcinoma (HCC).

Methods: Anti-cancer effects of panobinostat and doxorubicin are tested in DENA induced HCC in rats by pathological examination of liver sections and measuring liver enzymes. Anti-proliferative and pro-apoptotic effects are tested by measuring cell viability, P53, pd1 expression and cell cycle analysis in HepG2 cell line cultured with both drugs.

Results: Panobinostat was found to highly significantly inhibit Heppar-1 and VEGF levels and both drugs decrease ALT levels while AST was increased in panobinostat groups. Panobinostat was found to highly significantly induce apoptosis and decrease cell proliferation more than doxorubicin.

Conclusion: These results suggest that panobinostat may be a potent alternative to doxorubicin for treatment of HCC.

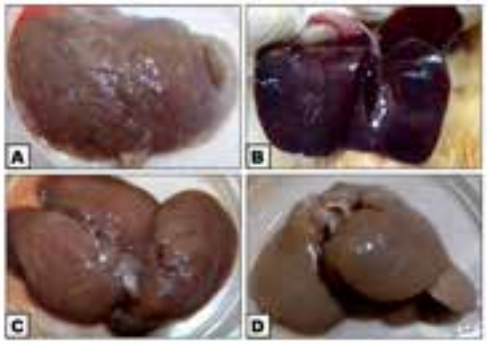

Figure 1 A&B: Liver of rats in DENA group. C: Liver of rat treated with intraportal panobinostat. D: Liver of rat treated with doxorubicin.

Biography

Neimat Abd El Hakam Yassin completed her PhD on experimental use of panobinostat in hepatocellular carcinoma at Clinical Pharmacology Mansoura, Faculty of Medicine. She is an Assistant Lecturer and has experience in teaching and research of pharmacology since 2007 in Clinical Pharmacology department in Faculty of Medicine, Mansoura University. She has a Master Degree in the use of hormonal antagonists in tumor therapy.

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