



PharmTech

International Journal of PharmTech Research

CODEN (USA): IJPRIF, ISSN: 0974-4304, ISSN(Online): 2455-9563
Vol.11, No.02, pp 177-189, 2018

Evaluation of anti-cancer activity of Brinzolamide with special emphasis on blood cancer (*Polycythemia Rubra Vera*) *in vivo*

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Abstract :

Introduction: Polycythemia is an uncommon type of cancer in which bone marrow produce too many red blood cells as well as due to overproduction of white blood cells and platelets. It is caused by neoplastic proliferation and maturation of erythroid, Megakaryocytic and Granulocytic elements to produce Panmyelosis. Looking at the dire to find better & safer alternate, we decided to work on Brinzolamide.

Methodology: *In vivo* anti-cancer potential of brinzolamide was evaluated using Cobalt containing Milk induced *polycythemia rubra vera* (PRV) on Swiss albino rat. Animals were subjected for 30 days treatment of Co-Milk along with respective drug administration. In this model, Methotrexate was taken as standard because of structural & mechanism similarity with brinzolamide.

Result: In Cobalt containing milk induced PRV, there was significant reduction in all the blood cell counts, increased blood flow rate & shown beneficial effects on other relevant parameters as well as shown protective action on spleen.

Conclusion: From the study conducted, we can conclude that Brinzolamide can serve as one of the alternate for blood cancer treatment specifically in *Polycythemia rubra vera*.

Keywords: Brinzolamide, Cobalt containing Milk induced Polycythemia, cytotoxicity, Spleenomegaly.

International Journal of PharmTech Research, 2018,11(2): 177-189.

DOI: <http://dx.doi.org/10.20902/IJPTR.2018.11208>
