

Conclusion

6. Conclusion

In conclusion, the alcoholic extract of *A. aspera* and *B. diffusa* as a monotherapy and in combination with sorafenib has shown good anticancer activity in HepG2 xenograft model of human HCC. Further, it provided valuable information for combination of extract with sorafenib. Both, the extracts and sorafenib showed anti-proliferative activity by inhibiting the cancer proliferating (Ki67) cells and angiogenesis (CD31 and VEGF). The activity was further enhanced with synergy in combination group of extracts with sorafenib. Additionally, both the extracts exerted apoptosis of HepG2 cells. Such combination also helped to reduce the potential toxicity of sorafenib (hepatotoxicity). Combined treatment with extracts and sorafenib achieved a superior therapeutic effect compared with the treatment with extracts or sorafenib alone. The combination of treatments also increased the ability of sorafenib to suppress the ERK phosphorylation. Thus, the extract has potential to be used as adjuvant therapy with the lower dose of current standard of care in hepatocellular carcinoma.