10.2 CONCLUSION

In current investigation, Polymeric Lipid Hybrid Nanocarriers (PLHNCs) were developed for combinatorial delivery of Docetaxel and shRNA pDNA against ABCB1 gene. It possesses established potential to treat cancer using combinatorial therapy involving chemotherapy and gene silencing approach which results in improved therapeutic index and reduction in dose dependent adverse effect of Docetaxel. Delivery of ABCB1 shRNA pDNA using PLHNCs targets P-gp and exerted its knock-down and responsible for higher sensitivity towards cancer cells. Formulated Docetaxel loaded shRNA pDNA anchored PLHNCs shown good transfection efficiency and delivered the shRNA pDNA and Docetaxel inside the cells. Targeting of cancer cells was achieved by anchoring folic acid to the PLHNCs surface and PEGylation of PLHNCs provides higher circulation time. Hence, the principle aspect of reversal of drug resistance in lung cancer was gratified. Targeted combinatorial approach for simultaneous delivery of drug and gene therapeutics established a potential treatment regimen to enhance efficacy and effectiveness of chemotherapeutic drugs in cancer while diminishing off targeted toxicity issues due to reduced dosing profile of anti-neoplastic drug.