Abstract:
Vesicular stomatitis virus (VSV), a negative-sense single-stranded-RNA rhabdovirus, is an extremely promising oncolytic agent for cancer treatment. Since oncolytic virotherapy is moving closer to clinical application, potentially synergistic combinations of oncolytic viruses and molecularly targeted antitumor agents are becoming a meaningful strategy for cancer treatment. Mitogen-activated protein kinase (MAPK) inhibitors have been shown to impair liver cell proliferation and tumor development, suggesting their potential use as therapeutic agents for hepatocellular carcinoma (HCC). In this work, we show that the impairment of MAPK in vitro did not interfere with the oncolytic properties of VSV in HCC cell lines. Moreover, the administration of MAPK inhibitors did not restore the responsiveness of HCC cells to alpha/beta interferon (IFN-α/β). In contrast to previous reports, we show that JNK inhibition by the inhibitor SP600125 is not responsible for VSV attenuation in HCC cells and that this compound acts by causing a posttranslational modification of the viral glycoprotein.