Reactivation of EBV as a Target for Retardation or Prevention of Relapse of NPC

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Background/Objective:
The reactivation of Epstein-Barr virus (EBV) had been shown to contribute most profoundly on the carcinogenesis of nasopharyngeal carcinoma (NPC) cells. The results suggested EBV reactivation may play important role in the relapse of NPC. Due to the progress in treatment of NPC patients, patients treated at early stages usually result in remission without relapse. However, patients treated at later stages usually result in relapse and metastasis and this is the major cause of NPC death in Taiwan. We sought to find agents which may inhibit reactivation of latent EBV in NPC cells and reduce the NPC tumor growth in animal model.

Methods:
EBV-negative NPC cells TW01 and EBV-positive NPC cells, NA, derived from TW01 were injected into SCID mice 4 weeks for tumor growth. Then mice were treated without (mock) or with SB for EBV reactivation in the presence or absence of luteolin, an agent inhibiting EBV reactivation.

Results:
The growth of NA cells in SCID mice after TPA/SB treatment was significantly reduced after treatment with luteolin. Concomitantly, EBV reactivation was inhibited by luteolin in the tumor tissues.

Conclusion:
Our results support the hypothesis that inhibition of reactivation of EBV in residual EBV-positive NPC cells after remission in NPC patients may help to retard or prevent the relapse of NPC.