Recombinant Oncolytic Virus, Preparation Method Thereof, Use Thereof and Medicine Thereof

Cross-Reference to Related Applications

The present disclosure claims the priority to the Chinese Patent Application with the application No. 201910462073.5, entitled “Recombinant Oncolytic Virus, Preparation Method Thereof, Use Thereof and Medicine Thereof”, filed with the Chinese Patent Office on May 30, 2019, the entirety of which is incorporated herein by reference.

Technical Field

The present disclosure pertains to the field of biotechnology, and particularly to an oncolytic virus, a preparation method thereof, a use thereof, and a medicine thereof.

Background Art

Cancers have become a main killer threatening human health. It has been shown according to data from *Global Cancer Statistics 2015* that about 14.1 million new cancer cases were reported globally in 2015, and the death toll reached 8.2 million. 4.29 million new cancer cases were reported in China in 2015, and the number of death cases reached 2.81 million. Currently, cancer treatment mainly relies on by conventional surgical resection, radiotherapy and chemotherapy. Surgical resection can eradicate tumors or at least mitigate patients’ suffering, but is not amenable to tumors located deep in the body due to lack of accessibility, and provides no help for already metastasized tumors. Radiotherapy and chemotherapy have long been used in clinic, but the application thereof is greatly limited due to the severe side effects derived from the non-selectivity between normal and tumor cells. In recent years, especially in the past five years, antibodies and CAR-T in treatment of cancers have attracted extensive attention. Antibody therapy can slow down the progression of cancers, but the therapeutic efficacy is far away from being satisfactory, and it has been widely believed antibody therapy is more suitable for use as an adjuvant therapy. Precise targeting can be achieved by CAR-T therapy, and CAR-T treatment might even cure cancers; however, CAR-T therapy might be mainly suited for treatment of hemological lymphomas, and one therapy is specifically for one patient, thus the cost for CAR-T treatment is extremely high. Moreover, the consequence of potential off-target engagement could be devastating or even deadly. In order to safely and efficiently treat cancers and relieve patients’ suffering, it is highly desirable to develop a novel therapy for treatment using a completely new strategy. Among all the choices of options, genetically engineered oncolytic virus stands out because oncolytic viruses have been demonstrated to be safe while there is no concern for drug