ABSTRACT OF THE DISCLOSURE

CAPSID-MODIFIED, RAAV3 VECTOR COMPOSITIONS AND METHODS OF USE IN GENE THERAPY OF HUMAN LIVER CANCER

Disclosed are next-generation multi-mutated capsid protein-modified rAAV expression vectors, as well as infectious virions, compositions, and pharmaceutical formulations that include them. Also disclosed are methods of preparing and using these high transduction efficiency vector constructs in a variety of therapeutic applications including, *inter alia*, as delivery agents for the treatment or amelioration of one or more diseases or abnormal conditions in an affected mammal using *in vivo* and/or *ex situ* viral vector-based gene therapy protocols. Also disclosed are large-scale production methods for the multi-mutated, capsid-modified rAAV expression vectors, viral particles, and infectious virions, as well as use of the disclosed compositions in the manufacture of medicaments for use in a variety of *in vitro* and/or *in vivo* therapeutic methodologies.

FIG. 40A