Inhibitors of protein-processivity factor

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Technology description

MARKETS ADDRESSED:
Herpes virus infection underlies a broad range of pathological conditions requiring long-term treatment in affected individuals. Genital herpes and sight-threatening ocular infections result from the infection of immunocompetent adults with herpes simplex virus (HSV), while human cytomegalovirus (CMV) produces diseases in immunosuppressed adults and transplant patients and is a major cause of birth defects. 'Productive' infection relies upon efficient replication of the viral genome in the affected host. Herpes virus DNA replication is enhanced by the interaction of virally-encoded processivity factors with host cell polymerase (Pol) molecules.

Application area

The disclosed invention is applicable to the design of a broad class of antiviral agents. Treatment of viral infection using drugs developed according to these methods is additionally encompassed by the invention.

Advantages

Harvard investigators have discovered that Pol interacts with a processivity factor at a site that is distinct from sites of normal interaction between known Pol family members and other cellular factors. Unlike most protein-protein interactions, the target site is uniquely suited to small molecule drug discovery. Structure-based methods of designing and screening candidate drugs aimed at disrupting Pol processivity factor binding at this target site are fully disclosed.

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