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chemistry

Conjugate for use in the prevention and treatment of infections caused by herpes simplex virus type 1.

About the invention

The invention concerns the CPP1-PEG-LK6 conjugate – a novel peptide compound intended for the prevention and treatment of infections caused by herpes simplex virus type 1. The conjugate combines the cell-penetrating peptide CPP1 with the cationic peptide LK6, linked via a PEG spacer to ensure stability and strong biological activity.

CPP1-PEG-LK6 exhibits potent antiviral effects by blocking key steps of HSV-1 infection, including heparan sulfate-mediated attachment and viral entry. The conjugate suppresses viral replication by several orders of magnitude while maintaining low cytotoxicity toward human cells.

The invention covers the conjugate's structure, synthesis method, and validated antiviral activity in cellular and 3D tissue models. The technology is suitable for topical antiviral formulations such as creams or drops.

Technology readiness level

TRL 4 - Technology validated in laboratory conditions.

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IP protection

The invention is protected by a patent application in the Patent Office of the Republic of Poland under the number: **P.448078**

Applications

- Development of dual-action topical antivirals,
- Prevention of HSV-1 reactivation in recurrent infections,
- Use in mucosal formulations for oral, nasal and ocular application

Possible cooperation

- Licensing or acquisition of therapeutic application rights,
- Joint research on topical formulations and peptide stability,
- Preclinical validation in HSV-1 infection models.

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