ABSTRACT

Glycosaminoglycans (GAGs) have garnered attention in virology due to their potential in mitigating lyssavirus attachment to brain cells. Recent studies highlight heparin's ability to impede viral attachment to heparan sulfate, suggesting its role in preventing viral entry. Pseudoviruses have been utilized as safer alternatives in lyssavirus research, generated through co-transfection of plasmids into cell lines, simulating viral features without the genome. TCID50 assays revealed the infectivity of these pseudoviruses, with varied results akin to conventional viral plaque assays for bat-borne lyssaviruses. The heparin inhibition assay displayed a dose-dependent relationship, despite minor discrepancies attributed to procedural errors. The observed decline in luminescence with increased heparin concentration aligns with heparin's antagonistic effect on rabies virus (RABV) attachment, indicating its ability to competitively inhibit viral binding to host cells. These findings underscore heparin's potential in disrupting virus attachment and subsequent infection, emphasizing its therapeutic promise.

Keywords: Glycosaminoglycans, heparin, lyssavirus, pseudovirus, heparin inhibition assay, antiviral mechanisms