Group B adenovirus enadenotucirev infects polarised colorectal cancer cells efficiently from the basolateral surface expected to be encountered during intravenous delivery to treat disseminated cancer

ABSTRACT

Enadenotucirev (EnAd) is a group B oncolytic adenovirus developed for systemic delivery and currently undergoing clinical evaluation for advanced cancer therapy. For differentiated carcinomas, systemic delivery would likely expose virus particles to the basolateral surface of cancer cells rather than the apical surface encountered during natural infection. Here, we compare the ability of EnAd and adenovirus type-5 (Ad5) to infect polarised colorectal carcinoma cells from the apical or basolateral surfaces. Whereas Ad5 infection was more efficient via the apical than basolateral surface, EnAd readily infected cells from either surface. Progeny particles from EnAd were released preferentially via the apical surface for all cell lines and routes of infection. These data further support the utility of group B adenoviruses for systemic delivery and suggest that progeny virus are more likely to be released into the tumour rather than back through the basolateral surface into the blood stream.

Keyword: Cell polarization; Tight junctions; Adenovirus; Tumour infiltration; Oncolytic virus; Colorectal cancer