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## A constructed porcine teschovirus with deleted highly conserved “RNNQIPQDF” epitope of VP1 has potential to serve as DIVA vector

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Differentiation of infected from vaccinated animals (DIVA) is an important strategy for disease control. Development of a specific epitope-erased marker vector and accompanying diagnostic serum may improve the efficiency of DIVA. Porcine teschovirus (PTV) is well suited for serving as an immunization vector due to its: Fecal-oral or intranasal route of infection; pantropism in swine host; generally low virulence and minor epidemic impact on swine herds worldwide and; DIVA purpose as proposed above. Here, a mono-specific antibody was found to recognize conserved “RNNQIPQDF” epitope spanning amino acids 188–196 of capsid protein VP1 of PTV1/PS 34 strain. The epitope was deleted and replaced by a reverse genetics procedure. The ability of this mono-specific antiserum to differentiate the epitope-erased marker PTV from parental virus shows its potential to serve as an immunization vector for swine diseases. This is the first report of a DIVA possibility based on an anti-structural protein antibody of PTV. In general, recombinant picornaviruses have DIVA potential on using as vector-based vaccines.

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