

# Neuraminidase stalk deletion decreased virulence and/or transmission of avian influenza viruses H5N8 and H7N7 in poultry

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# Generation of NA-stalk -mutants

Abbreviation

HP A/chicken/Germany/R28/03 (H7N7)

PKQEENLTCTTINQNNTTVVENTYVNNTTIITKETDWNT

Ext

LP A/turkey/Germany/R1361/11 (H7N7)

PKQEENLTCTT-----ITKETDWNT

Del

HP A/T.duck/Germany/R8444/16 (H5N8)

KGTIVREYNETVRIEKVTQWYNTSVVEYVPHWNEGAYIN

Ext

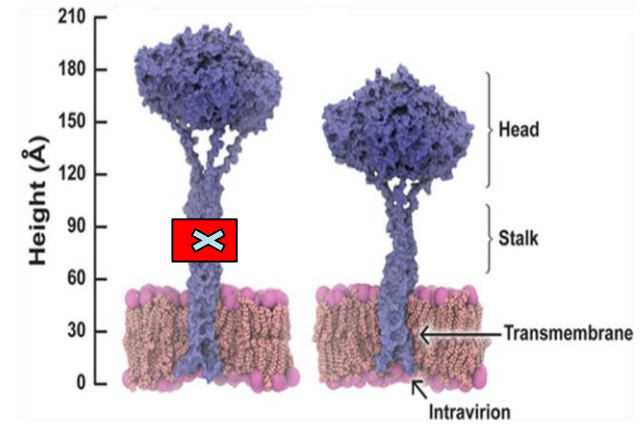
LP A/quail/Ca/K1400794/14 (H5N8)

KGTIVRD-----VPHWNEGAYIN

Del

Ext = extended

Del = deleted



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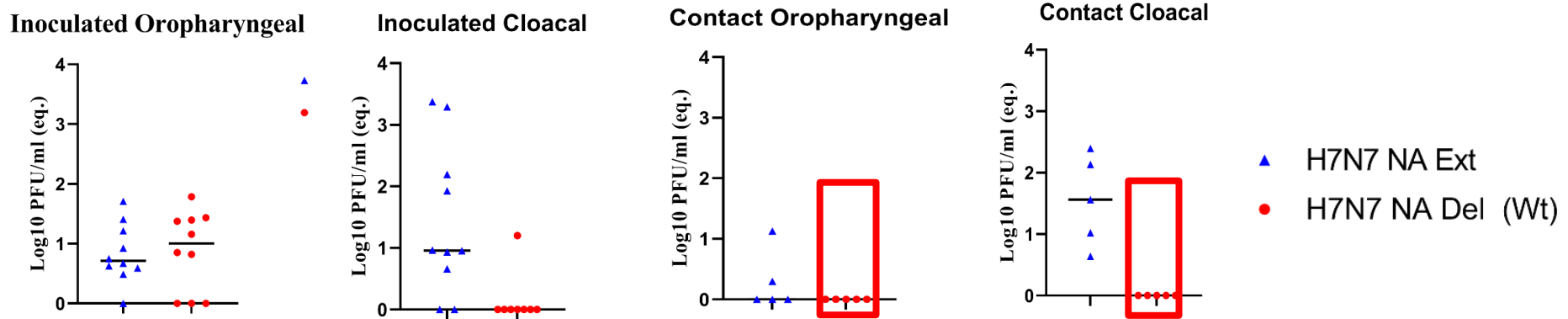
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# LP H7N7 NA-Mutants in chickens

Virus	Oculonasal Infection			
	Dead/ inoculated	Dead/ contact	Pathogenicity index	Mean death time (days)
LP H7N7 NA Ext	0/10	0/5	0	0
LP H7N7 NA Del (WT)	0/10	0/5	0	0

## Shedding of H7N7 NA-Mutants 4dpi



H7N7 NA deletion has **no** significant impact on virulence, but **reduced** cloacal shedding and transmission in chickens



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# H5N8 NA-Mutants



Virus	Oculonasal Infection			
	Dead/ inoculated	Dead/ contact	Pathogenicity index	Mean death time (days)
HP H5N8 NA Ext (WT)	10/10	5/5	2.7	2.4
HP H5N8 NA Del	10/10	5/5	2.5	3
HP H5N8 NA Ext (WT)	10/10	5/5	2.5	3.2
HP H5N8 NA Del	10/10	5/5	2.3	4.1
HP H5N8 NA Ext (WT)	10/10	5/5	2.4	3.4
HP H5N8 NA Del	7/10	5/5	1.6	4.1



H5N8 NA deletion has significant impact on virulence in ducks

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## DELTA-FLU



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