

A

VR2332	100%																					
RespPRRS vaccine	98.50%	100%																				
P129	90.50%	90.50%	100%																			
01NP1	85.92%	86.93%	88.44%	100%																		
Prime Pac	92.50%	92%	94.50%	89.44%	100%																	
Ingelvac ATP	90%	89.50%	94.50%	88.44%	92.50%	100%																
JXA1	87.50%	87%	91.50%	88.44%	91.50%	90%	100%															
MN30100	90.50%	90%	94%	85.92%	92.50%	92.50%	89%	100%														
2000-5424	90.50%	90%	95.50%	87.43%	93%	94.50%	90.50%	96%	100%													
Neb-1	93.50%	93%	95.50%	90.45%	99%	93.50%	92.50%	93.50%	94%	100%												
CH-1R	89.50%	89%	95.50%	86.43%	93%	93.50%	91.50%	92.50%	94%	94%	100%											
PRRSV0000 008973	86%	85.50%	88.50%	88.44%	89.50%	86.50%	87%	88%	88.50%	90%	88%	100%										
HG.RV2	87.50%	88%	92.50%	89.44%	92%	89.50%	98.50%	89%	90%	93%	91%	87.50%	100%									
NADC30	84%	84%	87.50%	91.45%	87%	87.50%	86%	86%	87%	88%	86%	85.50%	85.50%	100%								
GXLA12-2012	82%	82%	85%	83.41%	84.50%	83.50%	83%	83.50%	84%	85.50%	83.50%	80.50%	82%	86%	100%							
XW008	87.50%	87.50%	91.50%	86.43%	90.50%	90.50%	88.50%	93.50%	92%	91.50%	90.50%	89%	88.50%	86.50%	82%	100%						
MD001	84.50%	84%	89.50%	85.42%	88.50%	88.50%	88%	87%	89.50%	89.50%	88.50%	83%	87%	85.50%	89.50%	85%	100%					
Sar01/2013	97.50%	99%	90.50%	86.93%	92%	90%	87%	90.50%	90.50%	93%	89%	85.50%	88%	84%	82%	88%	84.50%	100%				
EDRD-1	89%	88.50%	90%	89.44%	92.50%	90.50%	89%	88%	88.50%	93.50%	88%	84.50%	89.50%	87%	85.50%	85.50%	87.50%	88.50%	100%			
GD	88%	87.50%	92%	88.94%	92%	90.50%	99.50%	89.50%	91%	93%	92%	87.50%	99%	86.50%	83%	89%	88%	87.50%	89.50%	100%		
Miyagi08-2	87%	86.50%	89%	87.93%	91%	88%	88%	88%	88.50%	91.50%	88%	84.50%	87.50%	87%	84%	86%	87%	86.50%	92%	88.50%	100%	
Zad-1	54.50%	53.50%	54%	53.26%	53.50%	52.50%	54.50%	53.50%	53.50%	54.50%	54.50%	53.50%	55%	53%	51.50%	53%	53%	54%	53%	55%	52.50%	100%
	VR2332	RespPRRS vaccine	P129	01NP1	Prime Pac	Ingelvac ATP	JXA1	MN30100	2000-5424	Neb-1	CH-1R	PRRSV000 0008973	HG.RV2	NADC30	GXLA12-2012	XW008	MD001	Sar01/2013	EDRD-1	GD	Miyagi08-2	Zad-1

B

VR2332	100%																					
RespPRRS vaccine	98.50%	100%																				
P129	91.50%	91.50%	100%																			
01NP1	89.94%	90.45%	91.95%	100%																		
Prime Pac	93%	92.50%	95%	93.46%	100%																	
Ingelvac ATP	92%	91.50%	96%	92.96%	94%	100%																
JXA1	90.50%	90%	92.50%	91.95%	94%	92.50%	100%															
MN30100	92%	91.50%	95.50%	90.45%	94%	93.50%	91.50%	100%														
2000-5424	92%	91.50%	96%	91.95%	94%	95%	92.50%	96.50%	100%													
Neb-1	94%	93.50%	96%	94.47%	99%	95%	95%	95%	95%	100%												
CH-1R	91%	90.50%	96%	90.45%	94%	95%	92.50%	94%	95%	95%	100%											
PRRSV0000 008973	89.50%	89%	91%	91.45%	92.50%	90%	89%	91%	91.50%	93%	90%	100%										
HG.RV2	90.50%	91%	93.50%	92.96%	94.50%	92%	98.50%	92%	92%	95.50%	92%	89.50%	100%									
NADC30	89%	88.50%	92%	93.46%	92%	93.50%	90.50%	91.50%	92%	93%	91%	89.50%	90%	100%								
GXLA12-2012	85%	84.50%	88%	87.93%	87.50%	87.50%	87%	87.50%	87.50%	88.50%	87%	86%	86%	89.50%	100%							
XW008	90.50%	90%	94%	90.45%	93.50%	92.50%	92.50%	94.50%	93.50%	94.50%	93%	92%	93%	92%	86%	100%						
MD001	87%	86.50%	91.50%	90.45%	91%	91%	91%	89.50%	91.50%	92%	91%	87.50%	90%	90%	91.50%	88.50%	100%					
Sar01/2013	97.50%	99%	91.50%	90.45%	92.50%	91.50%	90%	91.50%	91.50%	93.50%	90.50%	89%	91%	88.50%	84.50%	90%	87%	100%				
EDRD-1	90%	89.50%	93%	94.97%	94.50%	93.50%	93%	91.50%	91.50%	95.50%	91%	89.50%	93.50%	93%	88%	90.50%	91.50%	89.50%	100%			
GD	91%	90.50%	93%	92.46%	94.50%	93%	99.50%	92%	93%	95.50%	93%	89.50%	99%	91%	87%	93%	91%	90.50%	93.50%	100%		
Miyagi08-2	87.50%	87%	90.50%	92.46%	92%	90.50%	91%	90%	90.50%	92.50%	90%	88.50%	90.50%	91%	86.50%	89.50%	90%	87%	93%	91.50%	100%	
Zad-1	66%	65%	66.50%	65.82%	65%	64.50%	66.50%	66.50%	66%	66%	66%	64.50%	67%	67%	64.50%	67%	65.50%	65.50%	65%	67%	64%	100%
	VR2332	RespPRRS vaccine	P129	01NP1	Prime Pac	Ingelvac ATP	JXA1	MN30100	2000-5424	Neb-1	CH-1R	PRRSV000 0008973	HG.RV2	NADC30	GXLA12-2012	XW008	MD001	Sar01/2013	EDRD-1	GD	Miyagi08-2	Zad-1

C

Lopma virus	100%																								
RtMruf arterivirus	35.75%	100%																							
RtEi arterivirus	35.38%	70.98%	100%																						
LDV (Isolate p)	41.53%	49.22%	45.22%	100%																					
LDV (Neuro-virulent type C)	38.97%	50.77%	43.84%	83.91%	100%																				
RtClon arterivirus	36.78%	69.94%	62.17%	47.66%	48.70%	100%																			
MgAV1	35.38%	84.45%	67.48%	50.25%	45.32%	69.43%	100%																		
SHFV (LVR 42-0/M6941)	29.23%	25.38%	22.66%	24.62%	25.23%	23.31%	22.62%	100%																	
SHFV (B11661)	29.23%	25.38%	22.66%	24.62%	25.23%	23.31%	22.62%	99.64%	100%																
FSVV	33.33%	27.97%	29.06%	27.13%	26.63%	25.90%	24.43%	46.72%	46.72%	100%															
Pebjah virus	36.41%	28.49%	28.07%	32.66%	29.43%	28.49%	27.60%	54.43%	54.43%	50.81%	100%														
MYBV	35.89%	24.35%	29.06%	28.64%	27.57%	25.38%	22.17%	49.21%	49.21%	52.45%	54.03%	100%													
KKCBV	32.82%	25.38%	28.57%	30.15%	28.50%	25.38%	23.52%	48.50%	48.50%	51.63%	51.61%	60.93%	100%												
SHEV	11.53%	12.82%	11.53%	12.82%	10.89%	10.89%	12.17%	13.46%	13.46%	14.10%	15.38%	14.74%	16.66%	100%											
Praja virus	30.25%	31.08%	32.51%	33.66%	31.52%	31.60%	29.55%	22.16%	22.16%	23.64%	26.60%	26.10%	28.07%	12.82%	100%										
APRA	33.33%	30.05%	30.04%	30.65%	28.50%	30.56%	26.24%	27.07%	27.07%	22.70%	26.63%	25.76%	24.45%	12.82%	36.94%	100%									
Hedgehog arterivirus	28.71%	31.60%	31.52%	34.67%	30.24%	29.01%	30.73%	20.48%	20.48%	19.02%	23.90%	23.90%	19.51%	15.38%	34.97%	32.68%	100%								
OSV1	23.58%	25.38%	28.57%	28.14%	24.75%	24.87%	26.69%	17.96%	17.96%	23.30%	21.84%	20.38%	20.38%	11.53%	24.13%	21.35%	21.46%	100%							
EAV (PLD76)	18.46%	17.09%	16.74%	19.09%	18.69%	17.61%	14.47%	12.15%	12.15%	13.52%	14.91%	14.50%	13.72%	5.76%	14.77%	15.72%	15.12%	16.99%	100%						
ZMV1	30.25%	26.42%	25.61%	25.62%	26.16%	25.38%	22.62%	47.71%	47.71%	78.83%	48.54%	50.20%	48.54%	14.74%	22.16%	24.45%	16.58%	22.33%	12.03%	100%					
DMA	30.76%	25.90%	27.09%	26.13%	25.70%	25.38%	26.24%	52.45%	52.45%	51.63%	54.83%	50%	46.03%	15.38%	22.16%	24.45%	19.02%	21.35%	13.72%	51.86%	100%				
EAV (ARVAC)	18.46%	17.09%	16.74%	19.09%	18.69%	17.61%	14.47%	12.54%	12.54%	13.93%	15.32%	14.90%	14.11%	5.76%	14.77%	15.72%	15.12%	16.99%	98.43%	12.44%	14.11%	100%			
EAV (F20)	20%	17.61%	19.21%	20.10%	19.62%	19.17%	16.28%	12.54%	12.54%	14.34%	14.51%	14.90%	12.54%	6.41%	15.27%	14.41%	16.09%	16.01%	90.19%	13.69%	14.11%	88.62%	100%		
EAV (GB_Glos 2012)	19.48%	17.09%	19.21%	17.58%	18.22%	19.17%	16.74%	12.54%	12.54%	14.34%	13.70%	14.90%	13.72%	5.76%	15.27%	14.41%	15.60%	15.53%	89.80%	15.35%	14.90%	88.23%	92.94%	100%	
WPDV	8.98%	9.55%	8.98%	12.35%	11.79%	8.98%	10.67%	11.79%	11.79%	12.92%	10.11%	8.42%	13.48%	8.33%	8.98%	9.55%	9.55%	10.11%	8.98%	12.92%	9.55%	8.98%	9.55%	8.98%	100%
	Lopma virus	RtMruf arterivirus	RtEi arterivirus	LDV (Isolate p)	LDV (Neuro-virulent type C)	RtClon arterivirus	MgAV1	SHFV (LVR 42-0/M6941)	SHFV (B11661)	FSVV	Pebjah virus	MYBV	KKCBV	SHEV	Praja virus	APRA	Hedgehog arterivirus	OSV1	EAV (PLD76)	ZMV1	DMA	EAV (ARVAC)	EAV (F20)	EAV (GB_Glos 2012)	WPDV

D

Lopma virus	100%																								
RtMruf arterivirus	46.11%	100%																							
RtEi arterivirus	46.66%	78.75%	100%																						
LDV (Isolate p)	50.25%	61.13%	61.30%	100%																					
LDV (Neuro-virulent type C)	48.20%	64.76%	58.62%	87.93%	100%																				
RtClon arterivirus	47.15%	80.31%	71.50%	61.13%	62.69%	100%																			
MgAV1	47.17%	89.11%	75.36%	63.31%	58.41%	78.75%	100%																		
SHFV (LVR 42-0/M6941)	44.61%	42.48%	36.45%	39.19%	38.78%	39.37%	37.55%	100%																	
SHFV (B11661)	44.61%	42.48%	36.45%	39.19%	38.78%	39.37%	37.55%	99.64%	100%																
FSVV	45.64%	43%	43.34%	40.20%	38.78%	41.96%	40.27%	56.14%	56.14%	100%															
Pebjah virus	48.20%	42.48%	40.39%	44.22%	39.25%	40.93%	40.72%	64.91%	64.91%	59.42%	100%														
MYBV	48.71%	41.45%	39.90%	41.70%	39.71%	37.82%	37.10%	60.15%	60.15%	62.70%	61.69%	100%													
KKCBV	46.66%	41.45%	39.90%	44.72%	40.65%	37.82%	38.46%	60.82%	60.82%	61.47%	62.09%	71.48%	100%												
SHEV	20.51%	19.23%	17.94%	21.79%	19.87%	19.87%	20.51%	26.92%	26.92%	23.71%	24.35%	23.71%	25%	100%											
Praja virus	37.43%	45.59%	43.34%	43.71%	41.37%	44.04%	43.34%	33.49%	33.49%	36.45%	36.94%	35.46%	36.94%	21.15%	100%										
APRA	45.12%	40.93%	39.40%	41.70%	39.71%	42.48%	36.19%	41.48%	41.48%	36.68%	37.11%	34.49%	35.37%	23.07%	48.76%	100%									
Hedgehog arterivirus	36.92%	42.48%	44.33%	43.21%	40.48%	43%	41.46%	34.63%	34.63%	33.17%	35.12%	33.65%	32.19%	24.35%	42.36%	43.90%	100%								
OSV1	32.82%	36.78%	37.43%	40.70%	36.89%	38.86%	39.32%	31.06%	31.06%	33.98%	33%	31.06%	33.49%	16.66%	33.49%	33.49%	32.19%	100%							
EAV (PLD76)	28.20%	29.53%	28.07%	29.14%	28.97%	29.53%	28.95%	23.52%	23.52%	26.63%	26.20%	22.74%	23.13%	17.30%	22.66%	27.07%	23.90%	26.69%	100%						
ZMV1	42.56%	44.04%	40.88%	39.69%	40.18%	42.48%	38.91%	58.09%	58.09%	84.23%	60.99%	61.41%	60.99%	25.64%	35.46%	38.86%	32.19%	33.49%	25.31%	100%					
DMA	44.10%	41.45%	39.40%	39.69%	36.91%	38.34%	39.36%	60.37%	60.37%	59.42%	60.88%	57.42%	56.22%	26.28%	33.99%	34.93%	33.17%	32.52%	22.74%	60.99%	100%				
EAV (ARVAC)	28.71%	30.05%	28.57%	29.64%	29.43%	29.53%	29.41%	24.31%	24.31%	27.45%	27.01%	23.52%	23.92%	17.30%	23.15%	27.51%	23.90%	26.69%	98.43%	26.14%	23.52%	100%			
EAV (F20)	30.76%	32.12%	31.03%	32.16%	32.24%	32.64%	31.67%	24.31%	24.31%	27.04%	27.01%	23.52%	22.74%	18.58%	23.64%	27.07%	25.85%	26.69%	92.15%	25.72%	23.52%	90.58%	100%		
EAV (GB_Glos 2012)	30.25%	31.60%	30.04%	30.65%	30.84%	31.08%	31.22%	23.52%	23.52%	26.22%	25.80%	22.35%	21.96%	17.94%	23.15%	26.63%	25.85%	26.21%	92.54%	26.14%	23.52%	90.98%	95.29%	100%	
WPDV	18.53%	20.78%	19.10%	22.47%	23.03%	19.10%	22.47%	22.47%	22.47%	25.84%	21.34%	21.91%	24.71%	12.82%	17.97%	17.97%	15.73%	16.85%	16.29%	25.28%	21.34%	16.29%	17.41%	17.41%	100%
	Lopma virus	RtMruf arterivirus	RtEi arterivirus	LDV (Isolate p)	LDV (Neuro-virulent type C)	RtClon arterivirus	MgAV1	SHFV (LVR 42-0/M6941)	SHFV (B11661)	FSVV	Pebjah virus	MYBV	KKCBV	SHEV	Praja virus	APRA	Hedgehog arterivirus	OSV1	EAV (PLD76)	ZMV1	DMA	EAV (ARVAC)	EAV (F20)	EAV (GB_Glos_2012)	WPDV

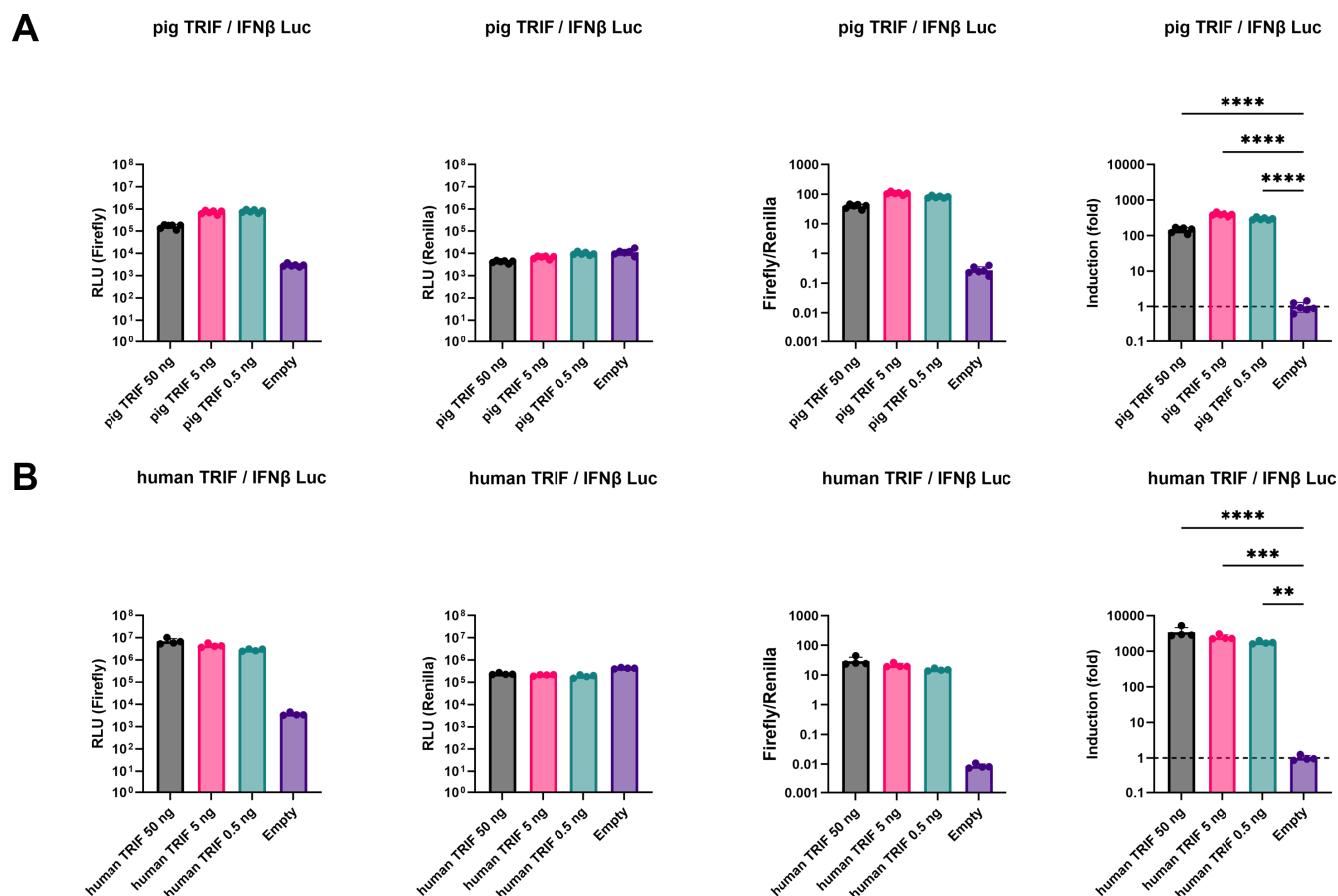
Supplementary Figure S1

(A, C) Sequence identity of GP proteins. (B, D) Sequence similarity of GP5 proteins. Sequence identity and similarity were calculated by Sequence Identities and Similarities website (http://imed.med.ucm.es/cgi-bin/sias_new.cgi?jobid=1710329285, accessed on 14 June 2024).

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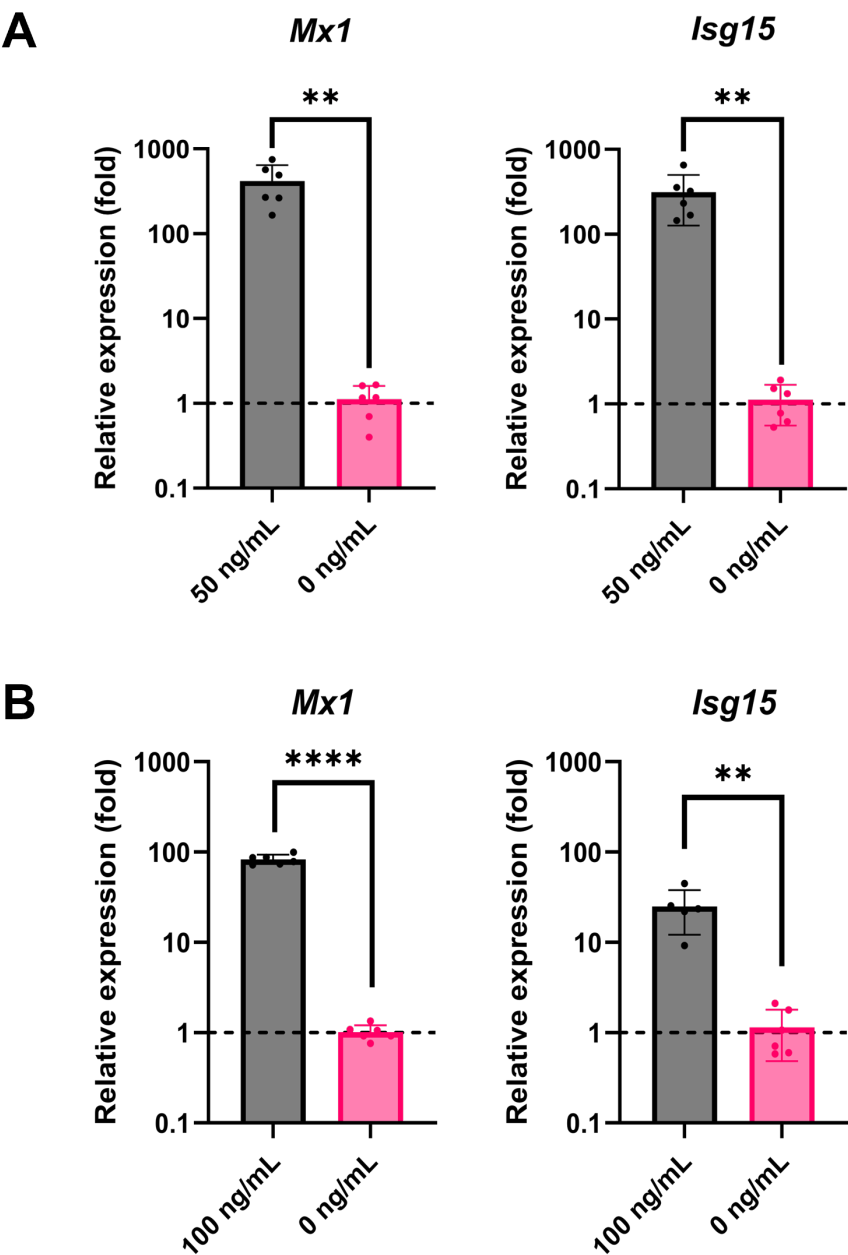
7

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Supplementary Figure S2. Induction of Firefly luciferase upon co-transfection of IFN- β Luc and TRIF plasmids.

Lenti-X 293T cells co-transfected with (A) IFN- β Luc plasmid and 50, 5, 0.5 ng pig TRIF plasmid, (B) IFN- β Luc plasmid and 50, 5, 0.5 ng human TRIF plasmid. Differences between TRIF plasmids and an empty plasmid as examined by one-way ANOVA followed by Dunnett's multiple comparison test. **** p < 0.0001, *** p < 0.001, and ** p < 0.01.



Supplementary Figure S3. IFN-stimulated gene (ISG) induction by Poly (I:C) or IFN-β.

Induction of ISG mRNA in SK-6 cells upon poly (I:C) or IFN-β treatment. The results show the mean and standard deviation of sextuplicate measurements from one representative assay. **(A)** ISG induction upon 50 ng/mL poly (I:C) treatment in SK-6 cells. **(B)** Induction of ISG mRNA under 100 ng/mL IFN-β treatment in SK-6 cells. Differences between untreated cells and 50 ng/mL poly (I:C) or 100 ng/mL IFN-β treated cells as examined by two-tailed, unpaired Student's t-test. **** $p < 0.0001$ and ** $p < 0.01$.