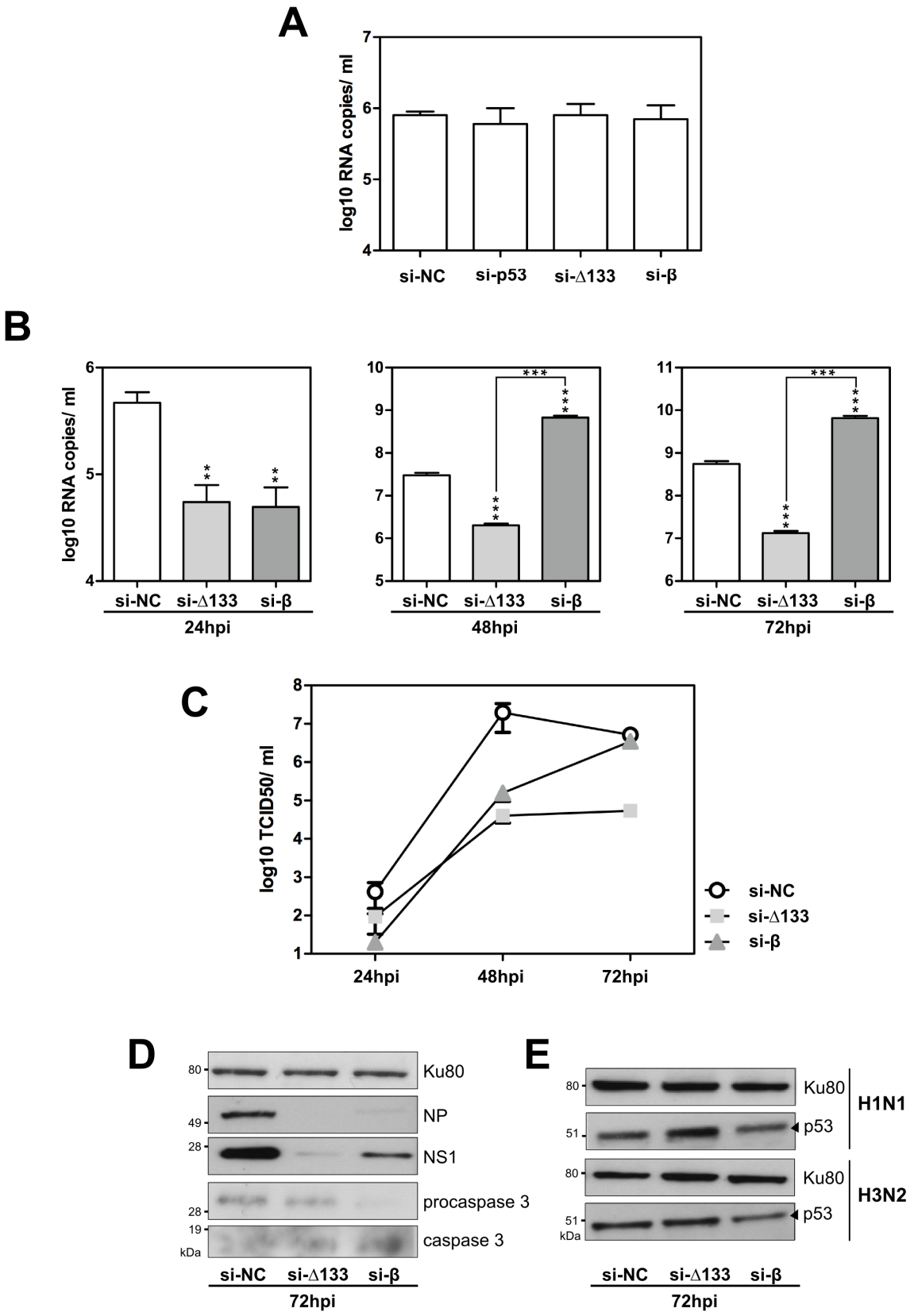
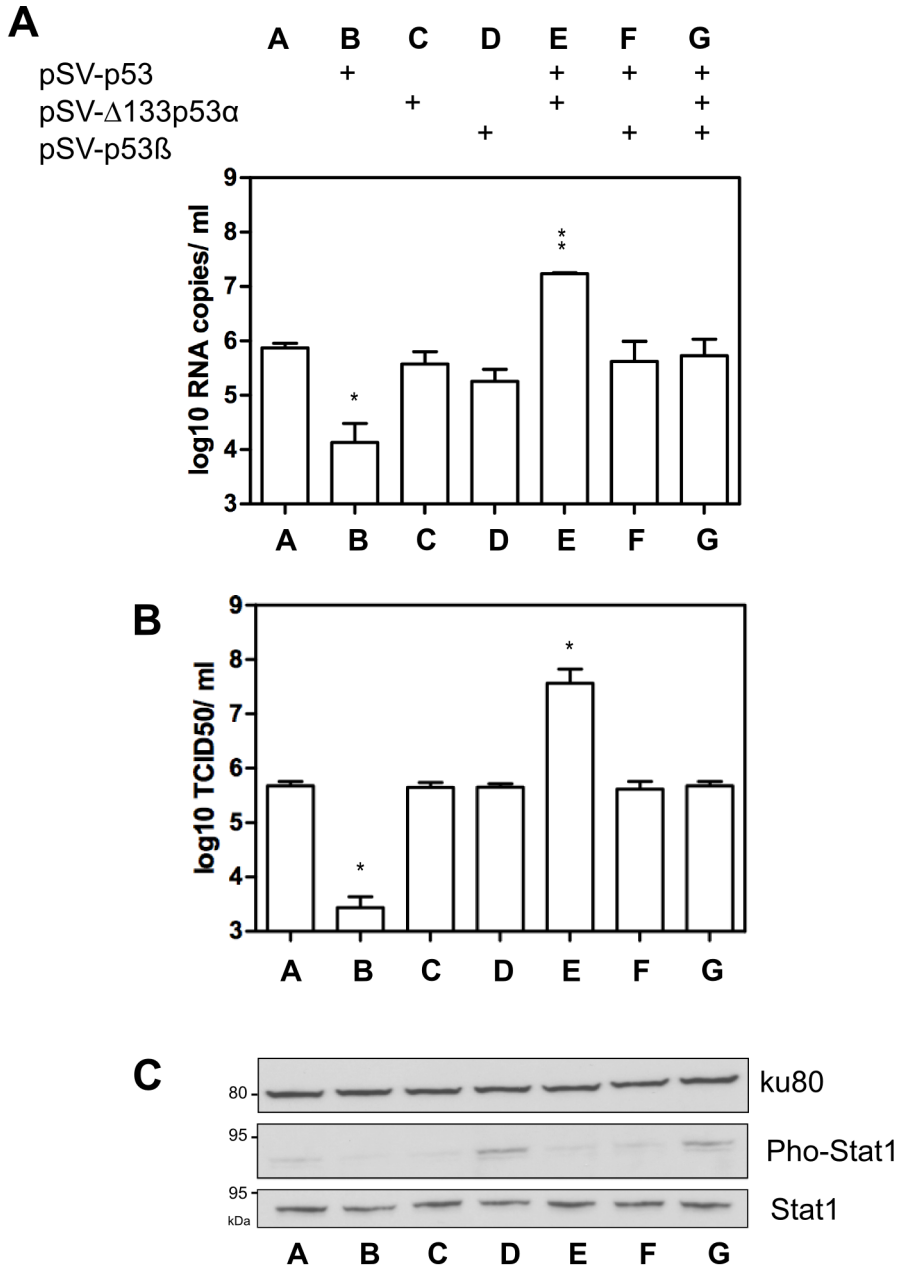
A		
siRNAs		**5'-3' sequences**
si-p53	si-TA (1 to 3)	GGA-AAC-UAC-UUC-CUG-AAA-A CAG-ACC-UAU-GGA-AAC-UAC-U CCU-GAA-AAC-AAC-GUU-CUG-U
	si-E7-8	ThermoScientific/Dharmacon reference #J-003329-14
si-Δ133	si-Δ133p53(a)	GGA-GGU-GCU-UAC-ACA-UGU-U
	si-Δ133p53(b)	AAC-AUG-UGU-AAG-CAC-CUC-C
si-β		GGA-CCA-GAC-CAG-CUU-UCA-A
B		
Primers and probes		**5'-3' sequences**
Actin		GGC-ACC-CAG-CAC-AAT-GAA-G (forward) GCC-GAT-CCA-CAC-GGA-GTA-CT (reverse) TCA-AGA-TCA-TTG-CTC-CTC-CTG-AGC-GC (probe)
Δ133p53		ACT-CTG-TCT-CCT-TCC-TCT-TCC-TAC-AG (forward) GTG-TGG-AAT-CAA-CCC-ACA-GCT (reverse) TCC-CCT-GCC-CTC-AAC-AAG-ATG-TTT-TGC-C (probe)
p53β		AAC-CAC-TGG-ATG-GAG-AAT-ATT-TCA-C (forward) TCA-TAG-AAC-CAT-TTT-CAT-GCT-CTC-TT (reverse) CAG-CAC-CAG-ACC-AGC-TTT-CAA-AAA-GAA-AAT-TGT-T (probe)
p53 (Exon8-9)		GAA-GAG-AAT-CTC-CGC-AAG-AAA-GG (forward) TCC-ATC-CAG-TGG-TTT-CTT-CTT-TG (reverse) AGC-ACT-AAG-CGA-GCA-CTG-CCC-AAC (probe)

Supplementary Table IA&B. siRNA, primers and probes used in this study.



Supplementary figure 1. Knockdown of Δ133p53α and p53β expression in A549 cells differentially modulates H3N2 influenza production. A. To exclude any artifactual effect of p53 siRNAs, H1299 (p53 null) cells were treated with the different siRNAs used in this

study and were infected, 48h ater treatment, with A/NewCaledonia/20/99 (H1N1) at a MOI of 0.01. Supernatants and cells were harvested at 24hpi and viral production was assessed by RTqPCR (log10 RNA copies/mL, measured in triplicate on 3 independent experiments). Results indicate that the different siRNAs treatment do not interfere with viral production. **B**. Human lung A549 cells were treated by siRNAs (non specific si-NC, siRNA-Δ133 or si-p53β respectively targeting Δ133p53 and p53β). Knockdown expression was verified by RTqPCR using a set of primers/probes specific of Δ133 or β forms at 48h post transfection (**supplementary table IA and IB**). (**B-E**) 48h after siRNA treatment, cells were infected at a MOI of 10^{-3} with influenza virus A/Moscow/10/99 (H3N2) and cells and supernatants were harvested at 24, 48 and 72 hours post-infection for analysis. Viral production was assessed by three different techniques: **(B)** quantification of M viral genome segment (log RNA copies/mL) released in supernatants by RT-qPCR after vRNA extraction, **(C)** determination of infectious titers of supernatants ($TCID_{50}$/mL) by end-point titration in MDCK cells and **(D)** analysis of NS1 expression by western blot at 72hpi. Expression of procaspase 3 and cleaved caspase 3 (**D**) as well as p53 (**E**) were also monitored by western blot at 72h post-infection. M genomic vRNA segments levels were measured in triplicate on two independent experiments and compiled to perform statistical analysis (*t*-student test *, **, *** respectively for a p-value <0.05, 0.005 and 0,001). For the infectious titers, the $TCID_{50}$ was calculated by the Reed and Muench statistical method.



Supplementary figure 2. Transient co-expression of p53 isoforms in H1299 cells differentially impacts on the level of viral production. Human lung H1299 cells (p53-null) were transfected with different combination of pSV constructs expressing p53, Δ133p53α or p53β. **A.** The level of ectopic protein expression was verified 24h post-transfection by western blot using the SAPU antibody, recognizing all p53 isoforms. Ku80 was used as a loading control. #1 and #2 indicate the Δ40p53β and the Δ160p53α (Marcel *et al.* 2010a), respectively. Transfected cells were then infected by

influenza virus A/Moscow/10/99 (H3N2) at a MOI of 0.01. Supernatants and cells were harvested at 24hpi and viral production was assessed by two different techniques: **B**. RTqPCR, (log10 RNA copies/mL, measured in triplicate on 3 independent experiments) or **C.** determination of infectious titers of supernatants (log10 $TCID_{50}$/mL) by end-point titration in MDCK cells (measured in quadruplicate on 2 independent experiments). For panels A and B : *t*-student test * and ** respectively for a p-value <0.05 and <0.005. **C**. Total protein lysates were harvested 24hpi and expression of Stat1 and phosphorylated Stat1 was analysed. Ku80 was used as a loading control.