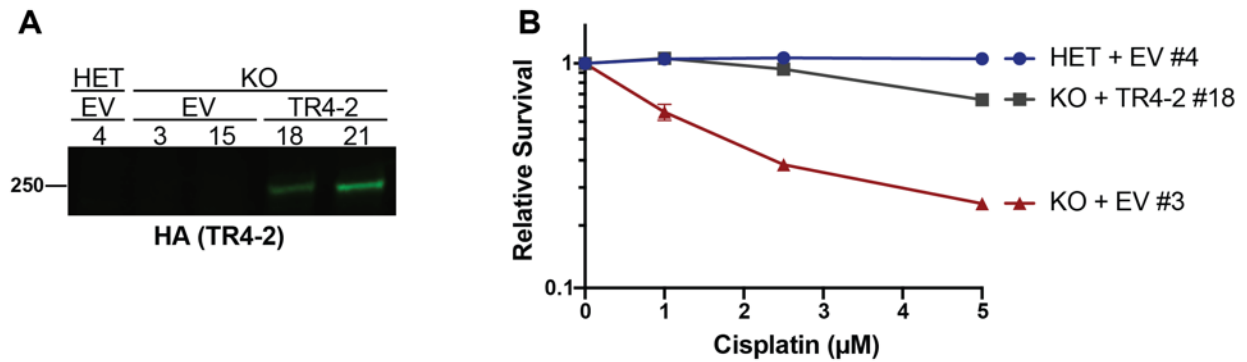


**Cell Reports, Volume 34**

**Supplemental information**

**Disruption of DNA polymerase  $\zeta$  engages  
an innate immune response**

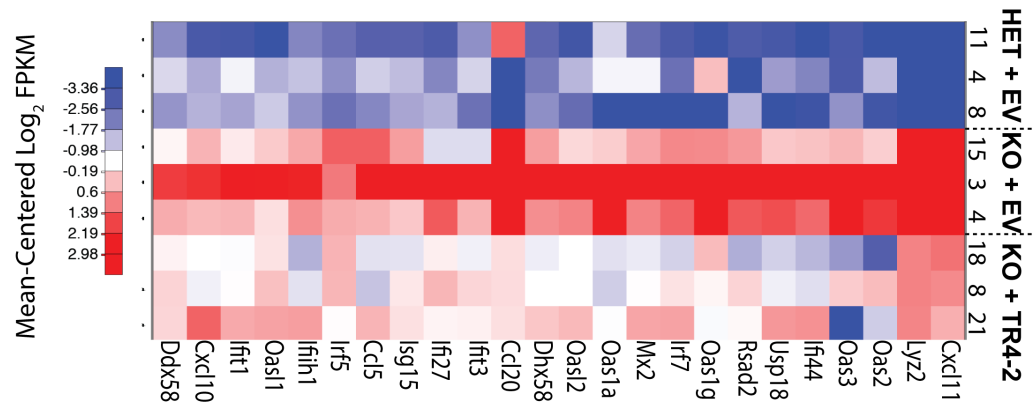
**Sara K. Martin, Junya Tomida, and Richard D. Wood**



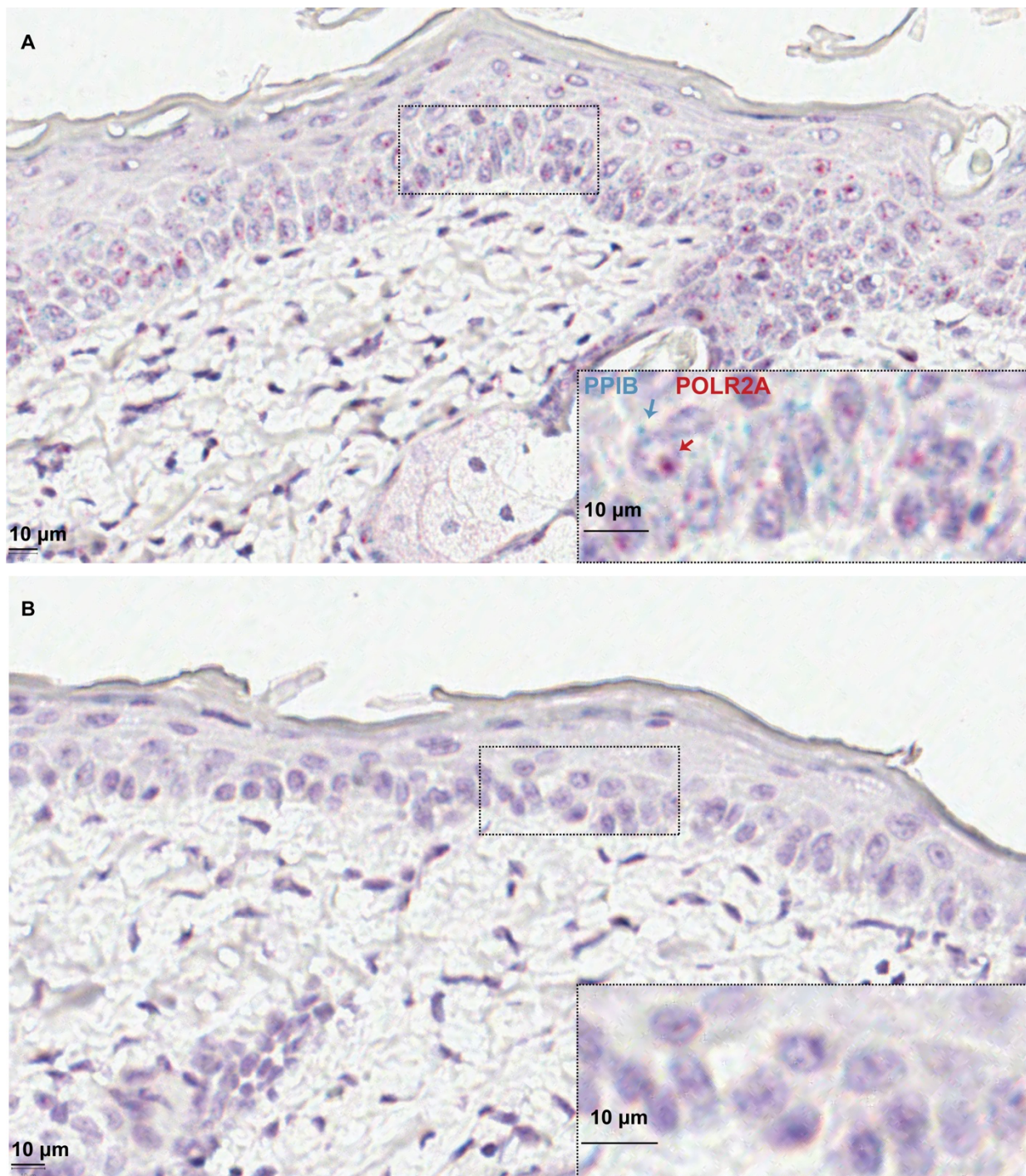
**Figure S1. Shortened REV3L construct rescues phenotypes of pol  $\zeta$  disruption in an additional set of clones, Related to Figure 1**

(A) Stable expression of TR4-2 with an N-terminal Flag-HA tag in *Rev3l* KO clones as detected by HA immunoblot. For REVERT total protein loading control see Fig 1 and S1 in Mendeley Data: [doi: 10.17632/5348dsphz.1](https://doi.org/10.17632/5348dsphz.1)

(B) Stable expression of TR4-2 in *Rev3l* KO MEF clones reverses hypersensitivity to cisplatin. MEFs were exposed to the indicated cisplatin concentrations for 48 hr and relative survival was quantified with the ATPlite assay.



**Figure S2. Heatmap of expression of 24 interferon-stimulated genes, Related to Figure 2**  
 The heatmap was generated with the same RNA-seq data, genes and samples as in Fig 2D and Table S1.



**Figure S3. Positive and Negative controls for single-molecule RNA in situ hybridization, Related to Figure 3.**  
 (A) Positive Control. Skin section of a keratin 5 conditional heterozygous *Rev3l* mouse (BK.5 Cre *Rev3l*<sup>+/lox</sup>) was analyzed with RNA in situ hybridization probes specific for the housekeeping genes *Ppib* (blue dots) and *Polr2a* (red dots). Arrows point to one example of probe signals.  
 (B) Negative control. Single-molecule RNA in situ hybridization in skin of keratin 5 conditional heterozygous *Rev3l* mouse (BK.5 Cre *Rev3l*<sup>+/lox</sup>) using a probe specific for the *Bacillus subtilis* *dapB* gene. As expected, no signal is detected.

Gene Name	Rev3/ KO + EV vs Rev3/ HET + EV		Rev3/ KO + TR4-2 vs Rev3/ KO + EV	
	Log2 Fold Change	FDR	Log2 Fold Change	FDR
<i>Cxcl11</i>	10.08783	1.43E-08	-5.0312	0.000362
<i>Lyz2</i>	8.870484	1.31E-09	-4.772444	1.91E-05
<i>Oas2</i>	8.267013	3.67E-05	-6.567388	0.002339
<i>Oas3</i>	7.959514	3.31E-06	-6.542195	0.000362
<i>Ifi44</i>	7.479926	1.44E-06	-4.825919	0.003736
<i>Usp18</i>	6.572054	7.54E-07	-4.059615	0.005592
<i>Rsad2</i>	6.196355	3.40E-05	-4.282616	0.01059
<i>Oas1g</i>	6.161099	0.000707	-5.145596	0.011973
<i>Irf7</i>	5.839463	5.85E-11	-3.041723	0.001875
<i>Mx2</i>	4.957664	0.000188	-3.258566	0.041769
<i>Oas1a</i>	4.870041	0.000783	-4.308707	0.009657
<i>Oasl2</i>	4.500346	9.79E-08	-2.551515	0.010097
<i>Dhx58</i>	4.068542	2.92E-09	-2.264432	0.004736
<i>Ccl20</i>	4.171942	0.004204	-4.143873	0.013561
<i>Ifit3</i>	3.995032	9.81E-05	-2.691874	0.032516
<i>Ifi27</i>	3.896872	1.04E-07	-1.961613	0.035
<i>Isg15</i>	3.587676	2.05E-07	-2.203871	0.007627
<i>Ccl5</i>	3.546222	3.94E-06	-2.176328	0.021028
<i>Irf5</i>	3.182247	5.70E-05	-0.922754	0.53922
<i>Ifih1</i>	3.155781	1.23E-06	-1.783102	0.032395
<i>Oasl1</i>	3.143506	0.000161	-1.113838	0.441074
<i>Ifit1</i>	3.131239	6.84E-05	-1.706951	0.113497
<i>Cxcl10</i>	3.042178	8.26E-06	-0.810127	0.544102
<i>Ddx58</i>	2.516276	2.12E-07	-1.110754	0.114366

**Table S1. Log2 Fold Change of 24 selected interferon stimulated genes, Related to Figure 2**

Species	Target	Direction	Sequence (5' to 3')	Source
Mouse	<i>Hprt</i>	Forward	CTGGTGAAAAGGACCTCTCG	Mackenzie et al., 2016
Mouse	<i>Hprt</i>	Reverse	CAAGGGCATATCCAACAACA	Mackenzie et al., 2016
Mouse	<i>Ccl5</i>	Forward	ACGTCAAGGAGTATTTCTACAC	Mackenzie et al., 2016
Mouse	<i>Ccl5</i>	Reverse	GATGTATTCTTGAACCCACT	Mackenzie et al., 2016
Mouse	<i>Cxcl11</i>	Forward	AGGAAGGTCACAGCCATAGC	Yang et al., 2007
Mouse	<i>Cxcl11</i>	Reverse	CGATCTCTGCCATTTTGACG	Yang et al., 2007
Mouse	<i>Rsad2</i>	Forward	ATAGTGAGCAATGGCAGCCT	West et al., 2015
Mouse	<i>Rsad2</i>	Reverse	AACCTGCTCATCGAAGCTGT	West et al., 2015
Mouse	<i>Ifih1</i>	Forward	CGGAAGTTGGAGTCAAAGC	West et al., 2015
Mouse	<i>Ifih1</i>	Reverse	TTTGTTCACTCTGAGTCATGG	West et al., 2015
Mouse	<i>Isg15</i>	Forward	CTAGAGCTAGAGCCTGCAG	West et al., 2015
Mouse	<i>Isg15</i>	Reverse	AGTTAGTCACGGACACCAG	West et al., 2015
Mouse	<i>Irf7</i>	Forward	CAATTCAGGGGATCCAGTTG	West et al., 2015
Mouse	<i>Irf7</i>	Reverse	AGCATTGCTGAGGCTCACTT	West et al., 2015

**Table S2. Primers used for qPCR in this study, Related to STAR Methods.**