

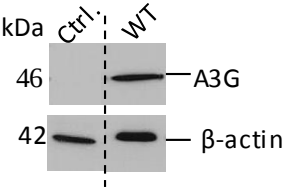
The double-domain cytidine deaminase APOBEC3G is a cellular site-specific RNA editing enzyme

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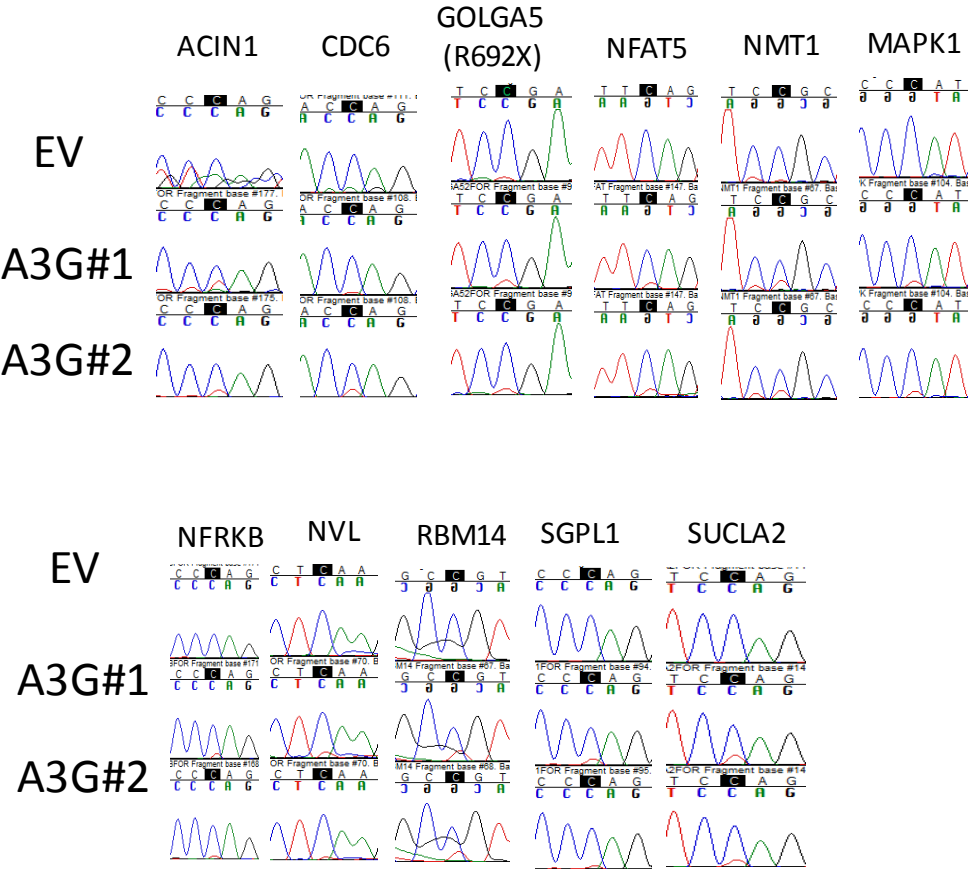
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Supplementary Figure 1

a

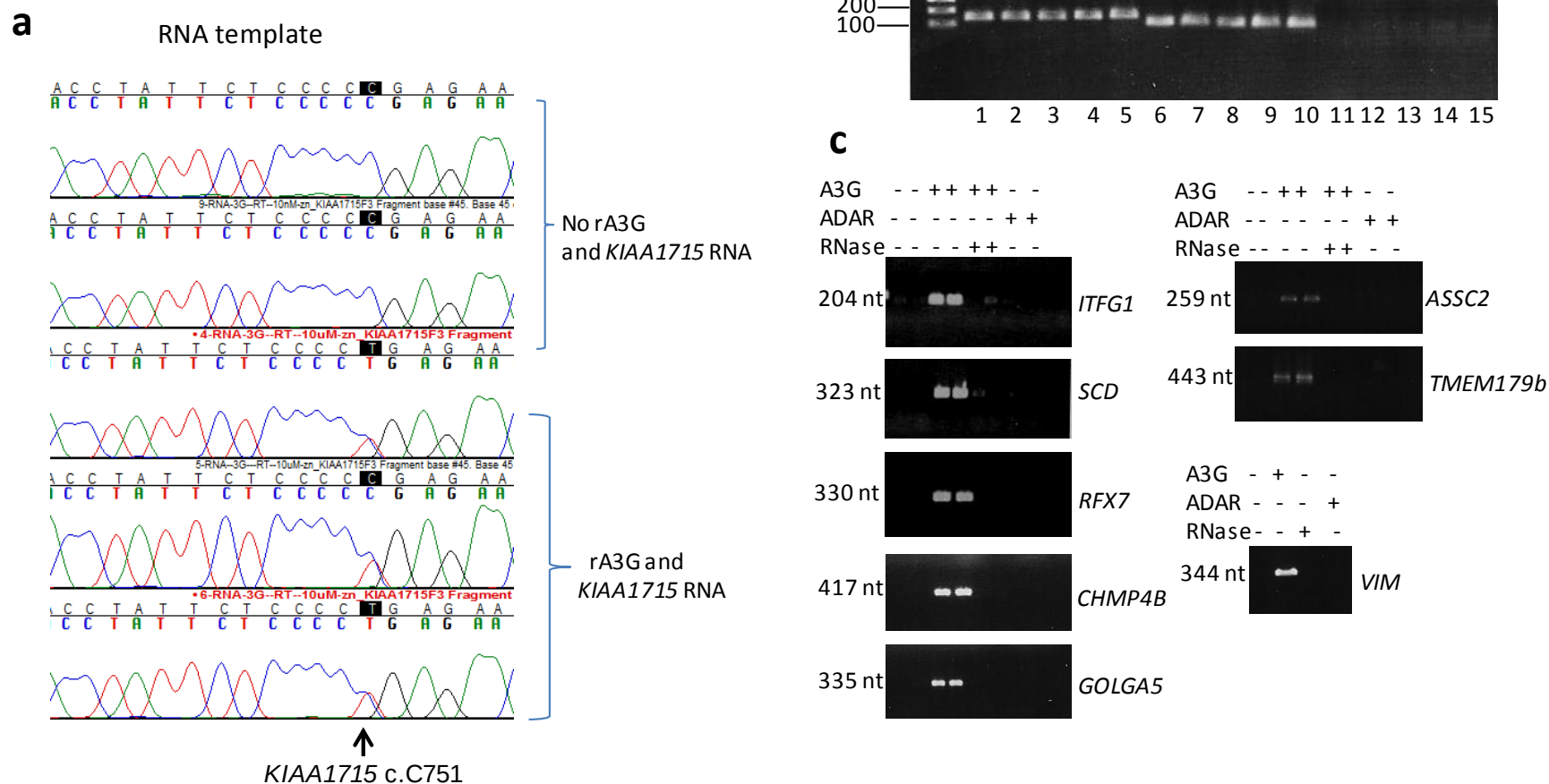


b



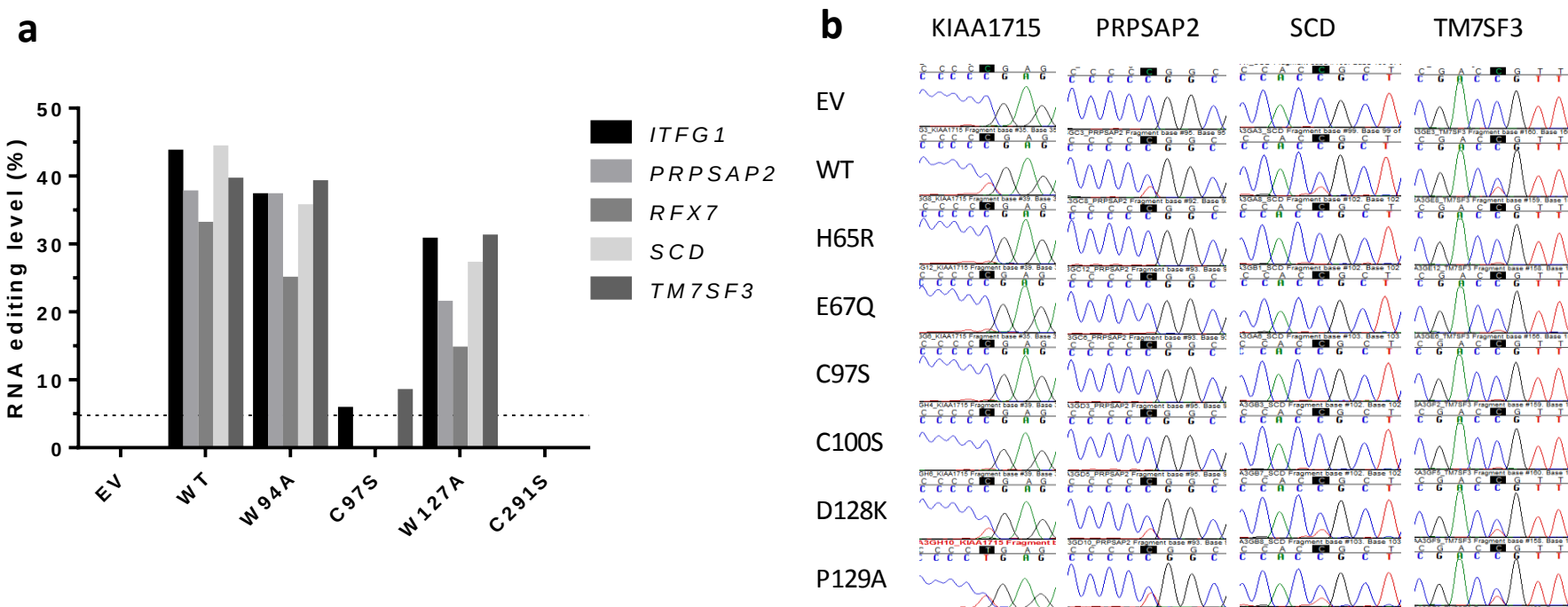
Supplementary Fig. 1: Transient overexpression of APOBEC3G induces C>U RNA editing in 293T transfectants. (a) Immunoblot showing the expression of WT A3G in empty vector (ctrl.) and A3G in whole cell lysates (20 µg) of transfectants. β-actin is a loading control. Both lanes are part of the same gel, but other lanes have been cropped out and the dashed line represents the cropped region. **(b)** Chromatograms of cDNA (in duplicate) RT-PCR products from control and A3G transfectants confirms site-specific C>U RNA editing (edited C is shaded black) in selected genes.

Supplementary Figure 2



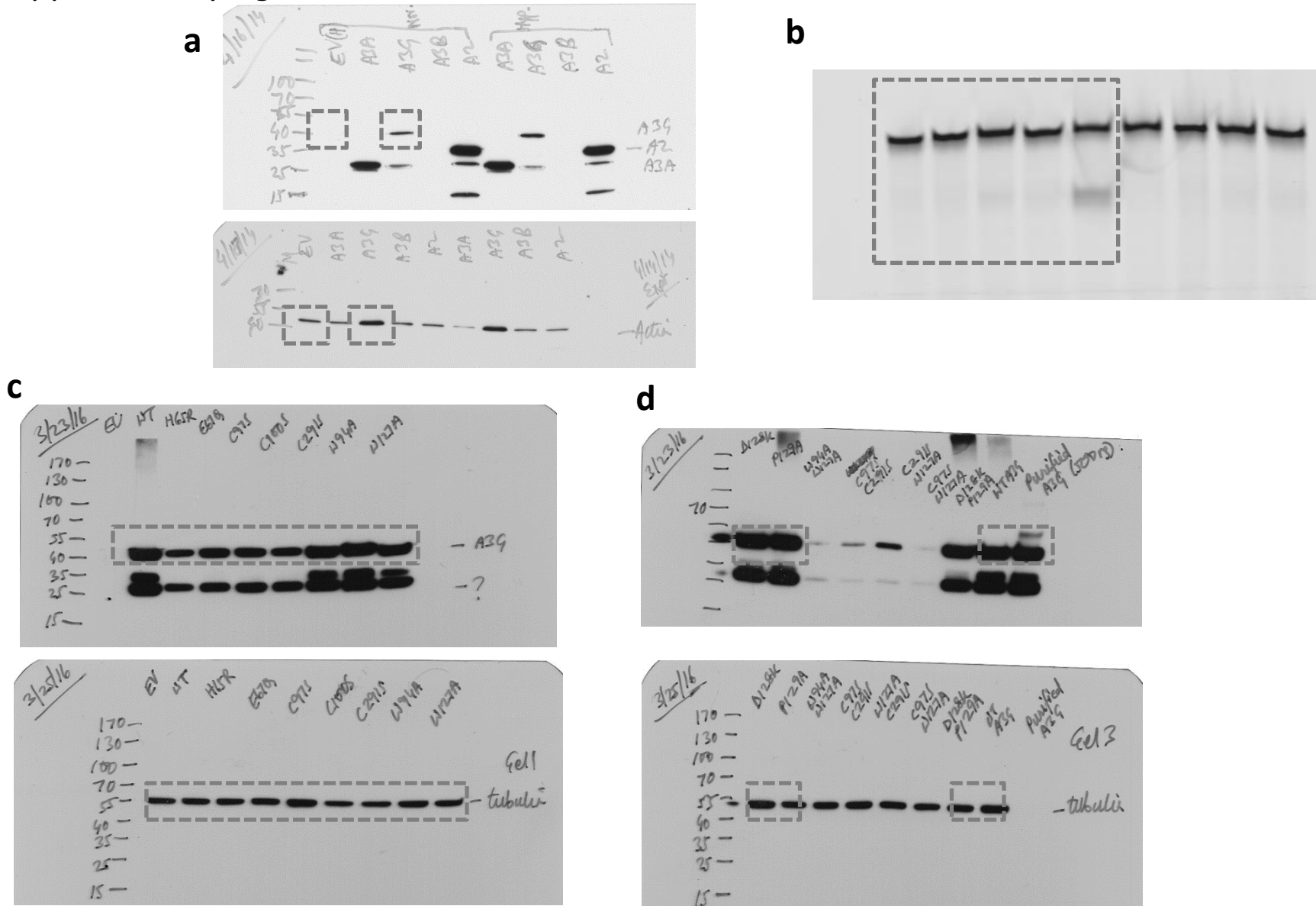
Supplementary Fig. 2. Recombinant APOBEC3G co-purifies with bound RNAs. (a) Chromatograms of cDNA (in duplicate) RT-PCR products of *KIAA1715* RNA from in vitro editing assay in the absence or presence of purified A3G confirms site-specific C>U RNA editing (edited C is shaded black) in selected genes. (b) Gel electrophoresis showing RT-PCR products of *MED1*, *KIAA1715* and *SDHB* RNAs that were amplified from in vitro RNA editing reactions containing rA3G only (lanes 1-3, 6-8 and 11-13). Lanes 4, 5, 9, 10 and 14, 15 are controls from 293T cells transiently expressing EV or A3G. (c) Gel electrophoresis showing RT-PCR products of *ITFG1*, *SCD*, *RFX7*, *CHMP4B*, *GOLGA5*, *ASSC2*, *TMEM179b* and *VIM* RNAs that were amplified from in vitro RNA editing reactions containing rA3G with or without RNase or ADAR enzyme (n=2 except *VIM*, n=1).

Supplementary Figure 3



Supplementary Fig. 3. Site-directed mutagenesis of APOBEC3G shows requirement of both N- and C-terminal domain zinc coordinating site residues for site-specific RNA deamination. (a) Site-directed mutagenesis of APOBEC3G shows requirement of both N- and C-terminal domain Zinc coordinating residues for site-specific RNA editing. Bars represent percentage of T peaks in Sanger sequencing traces shown in Fig. 4a (n=1). (b) Representative chromatogram of cDNA of PCR products from control/WT/mutant A3G transfectants shown in Fig. 4d demonstrating the effect of A3G-NTD and CTD mutations on C>U RNA editing (edited C is shaded black) of *KIAA1715*, *PRPSAP2*, *SCD* and *TM7SF3*.

Supplementary Figure 4



Supplementary Fig. 4. Full-length versions of immunoblots and gels. (a) Uncropped immunoblot shown in Supplementary Fig. S1. (b) Uncropped version of the gel depicting the DNA deamination assay in Fig. 3b. (c) Uncropped immunoblot shown in Fig. 4c. (d) Uncropped immunoblot shown in Fig. 3a (dotted box on the right). Dotted gray boxes depict the cropped regions shown in the main/supplementary figures