**SUPPLEMENTARY INFORMATION GUIDE**

# Tumour DDR1 Promotes Collagen Fibre Alignment to Instigate Immune Exclusion

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Running Title: Breaking down DDR1-dependent immune exclusion

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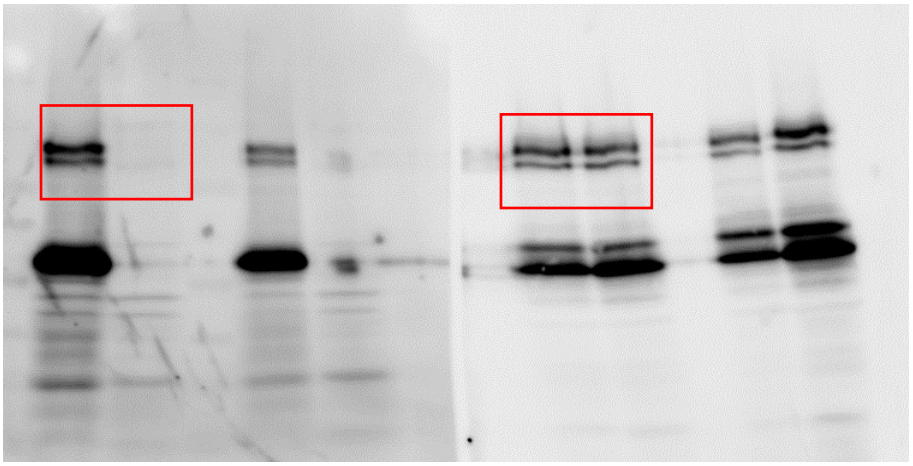
**Supplementary Figure 1.** Gel source data for Main Figure 1a



DDR1 DDR2

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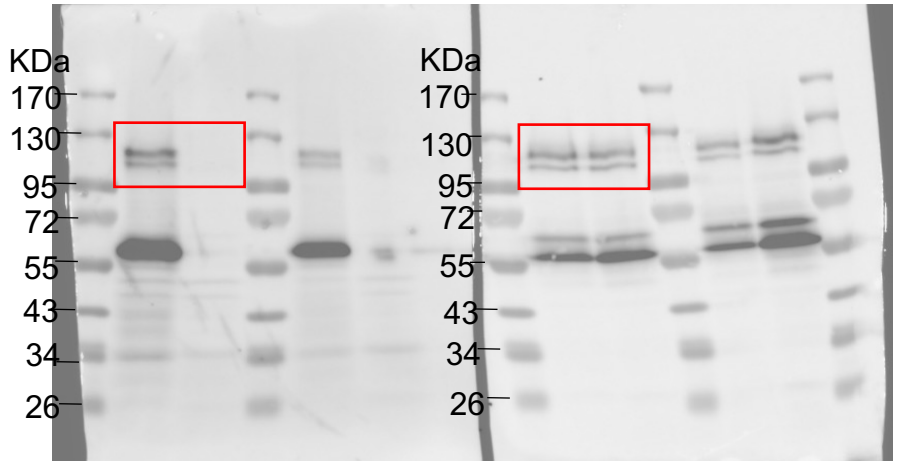
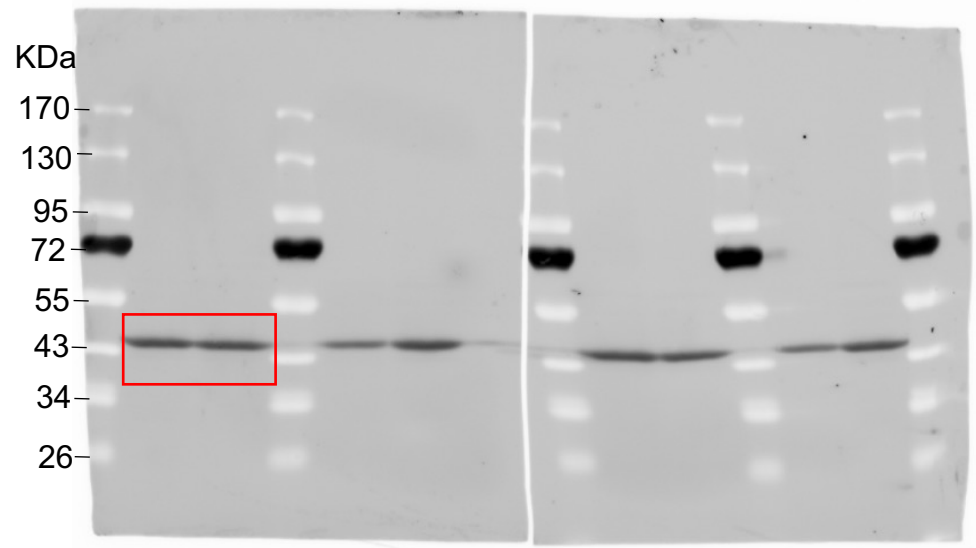
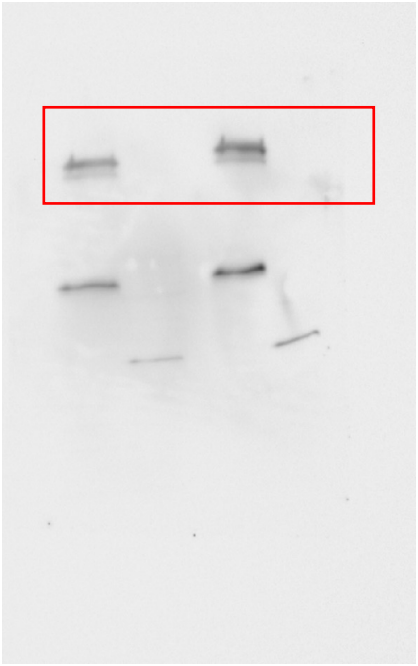



DDR1 DDR2

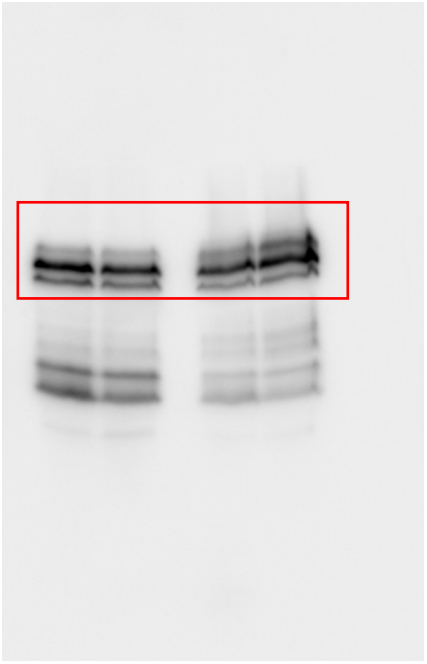



β-ACTIN

**Supplementary Figure 2.** Gel source data for Extended Data Figure 1a



DDR1



DDR2

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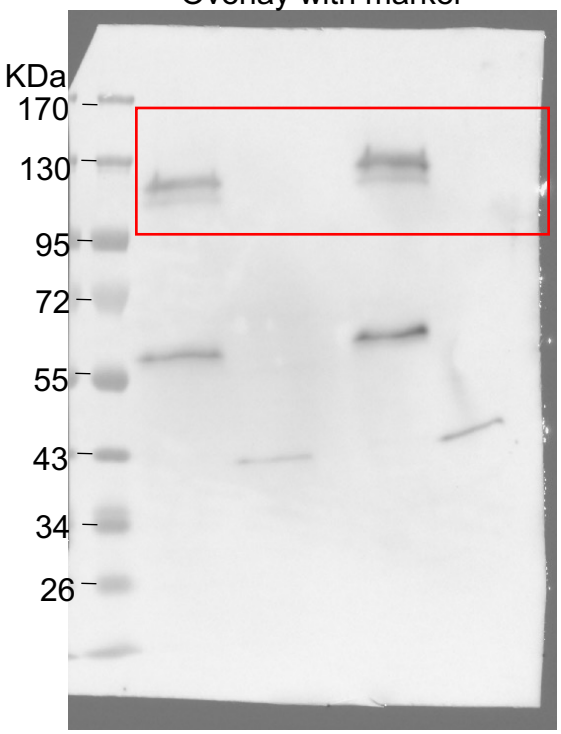


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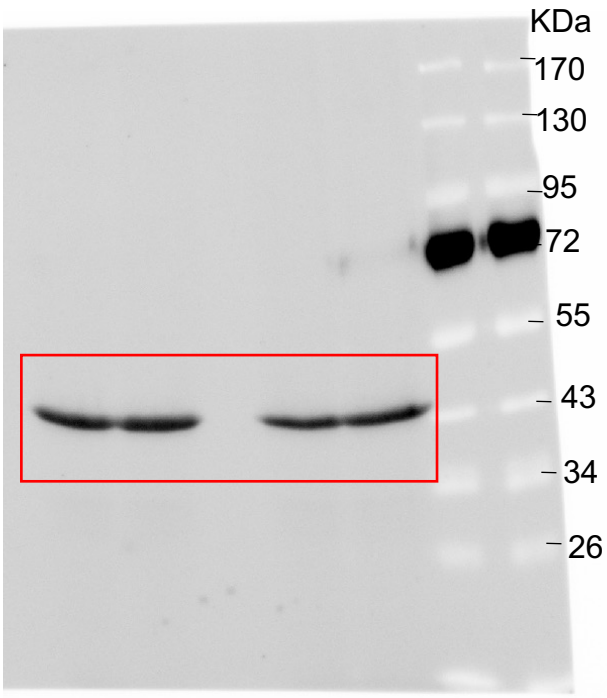
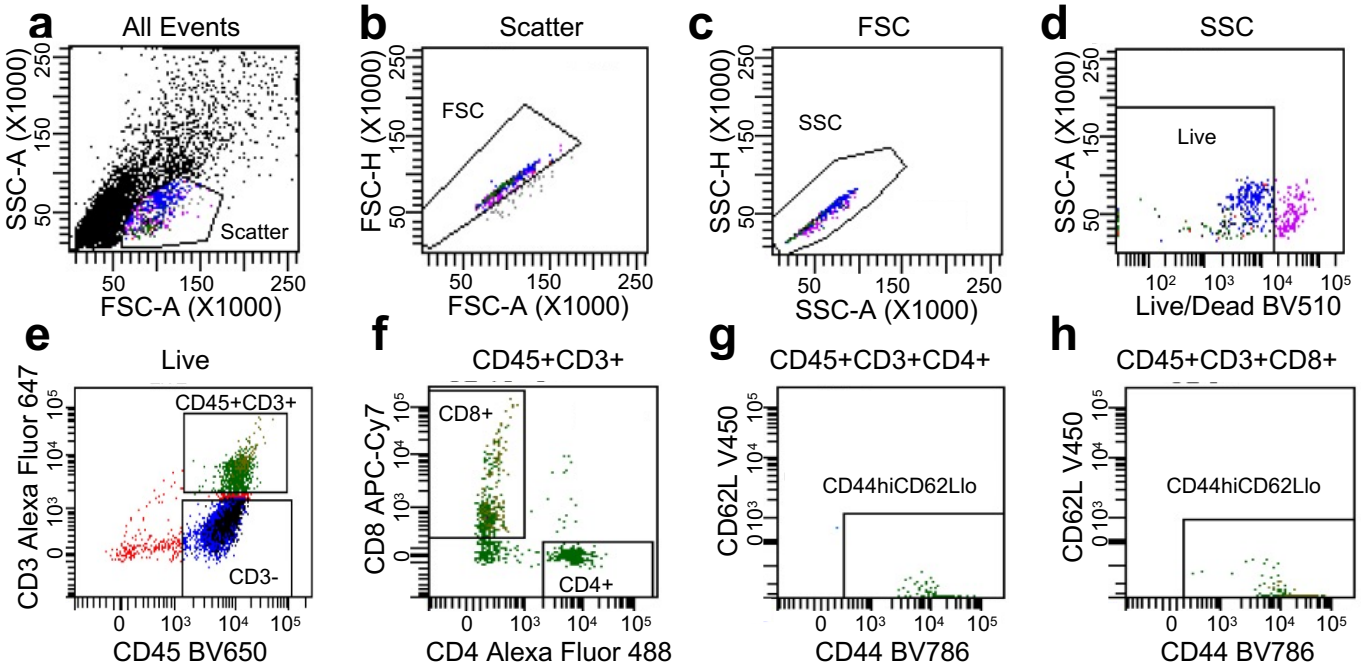
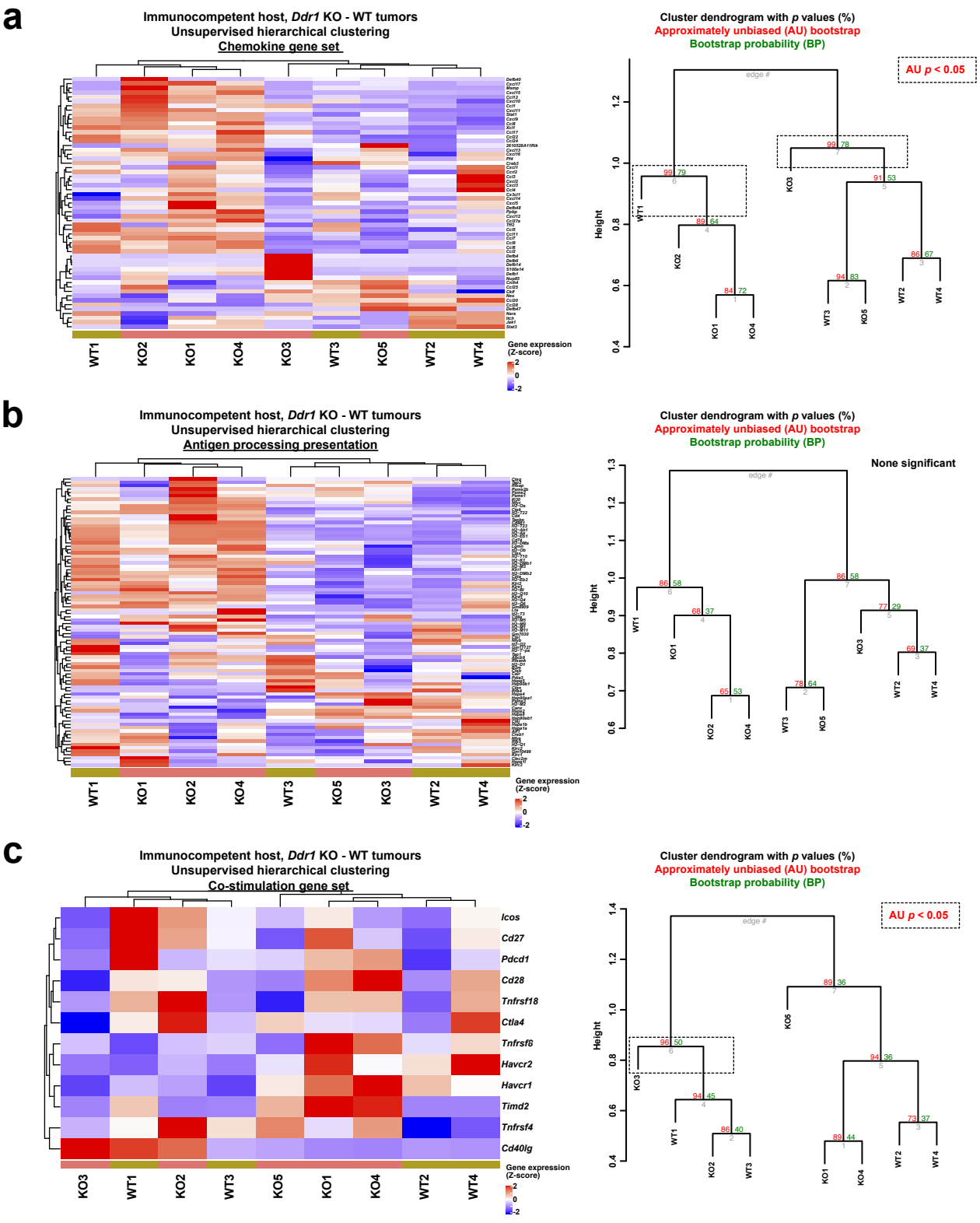



β-ACTIN

**Supplementary Figure 3.** Representative gating strategies for flow cytometry analysis of TILs used in this study.



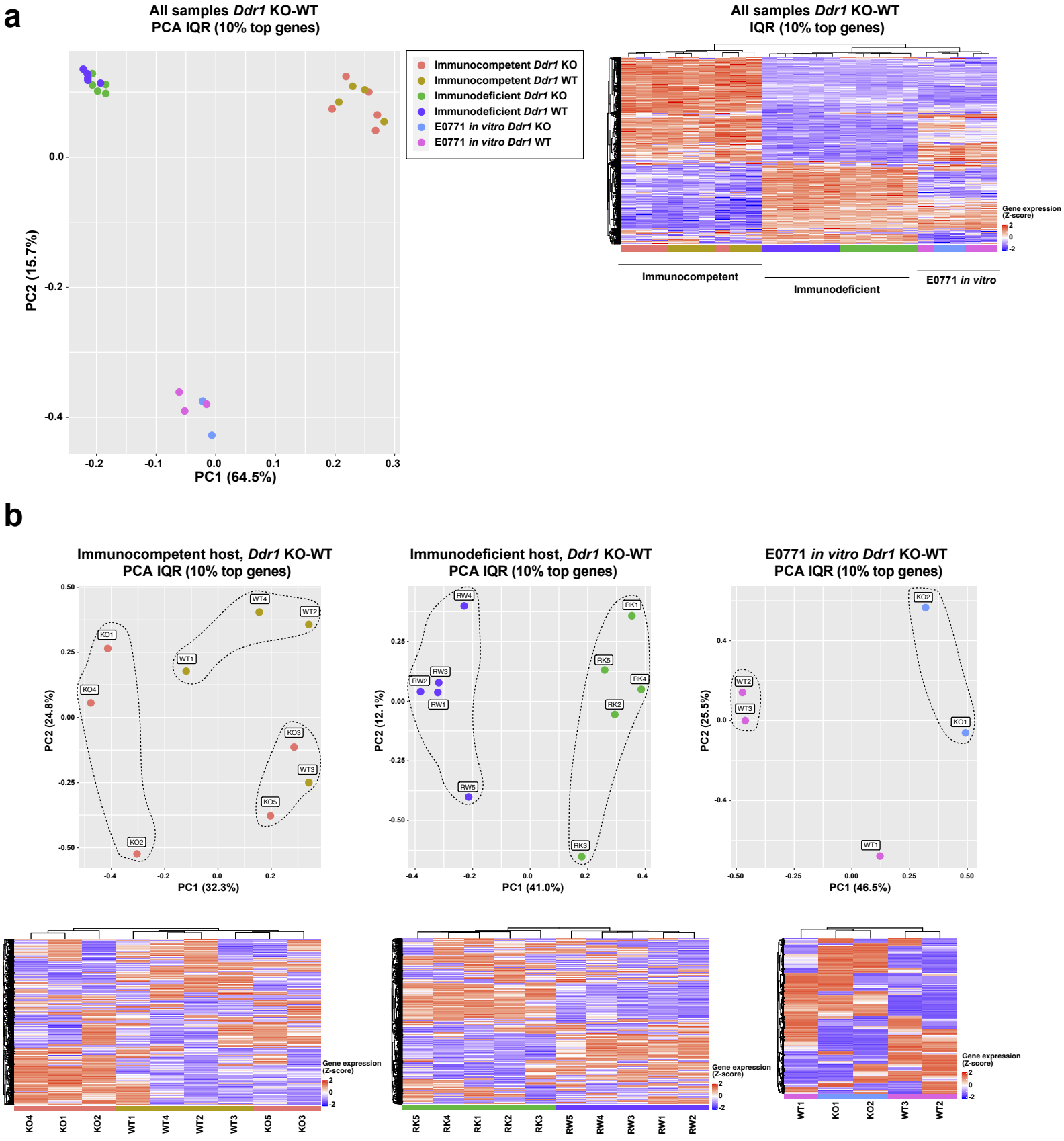
**Supplementary Figure 4.** Immune-related transcriptomic changes



**Supplementary Figure 4. Immune-related transcriptomic changes.**

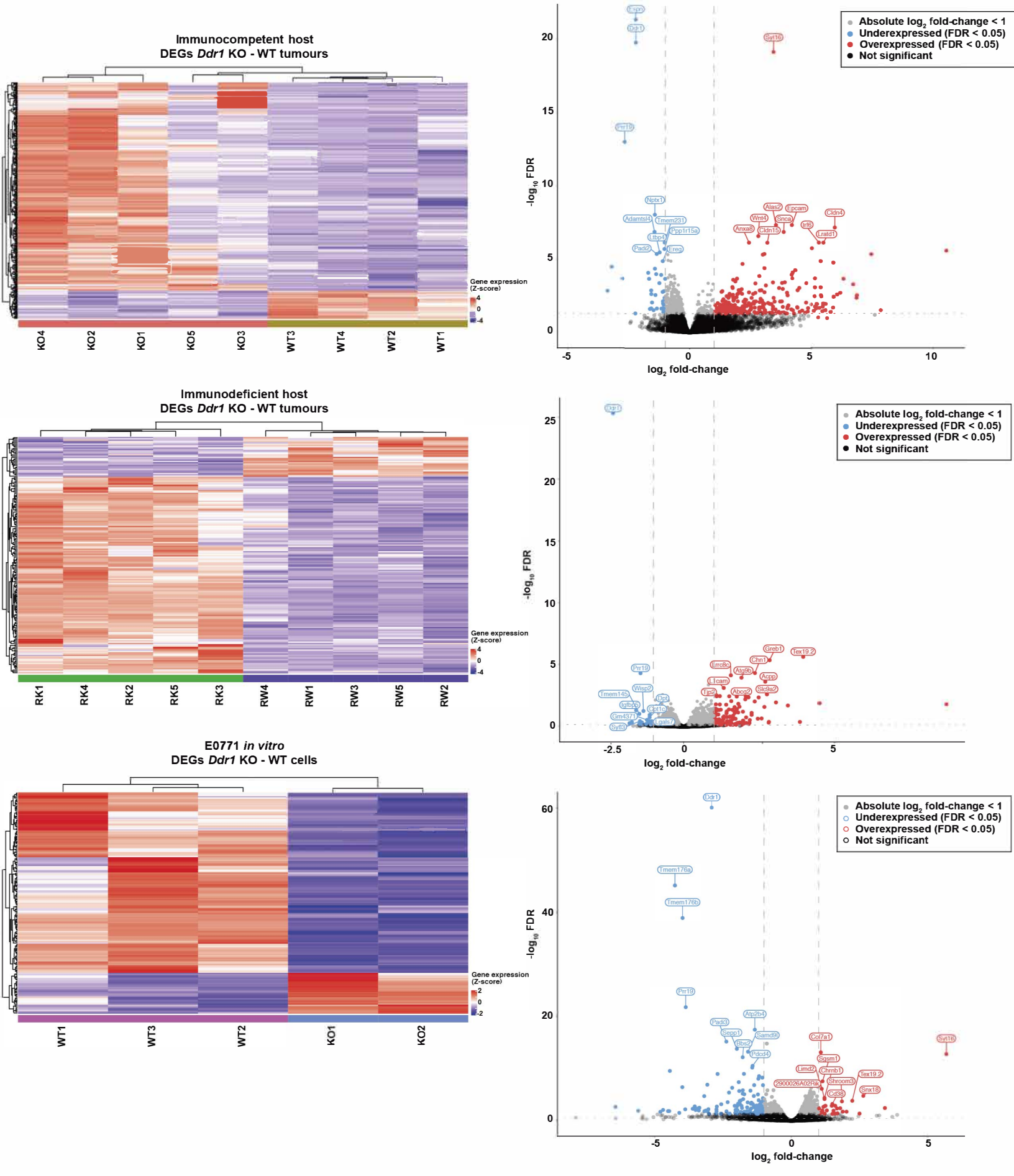
(**a-c**) Left panels, unsupervised hierarchical clustering of the expression of immune-related gene sets in *Ddr1*-WT and KO tumours from immunocompetent hosts: chemokine genes (a); genes involved in antigen processing/presentation (b); and co-stimulation genes (c). Right panels, hierarchical clustering performed for the gene sets using the R package Pvclust. Values at branches are approximately unbiased (AU) *p* values (left, red font) and bootstrap probability (BP) values (right, green font). The clusters considered significant (AU $p < 0.05$) are marked by dashed rectangles.

**Supplementary Figure 5.** PCA of transcriptome profiles across studies and samples



**Supplementary Figure 5. PCA of transcriptome profiles across studies and samples.** (**a**) Left panel, PCA plot including all tumours/cells analysed by RNA-seq. Right panel, unsupervised hierarchical clustering of the genes with the highest (10% top) IQR. The gene list is provided in Extended Data Table 1. (**b**) Top panels, PCA plots of the tumours/cells analysed by RNA-seq in each setting. Bottom panels, unsupervised hierarchical clustering of the genes with the highest (10% top) IQR in each setting. The gene lists are provided in Supplementary Table 1.

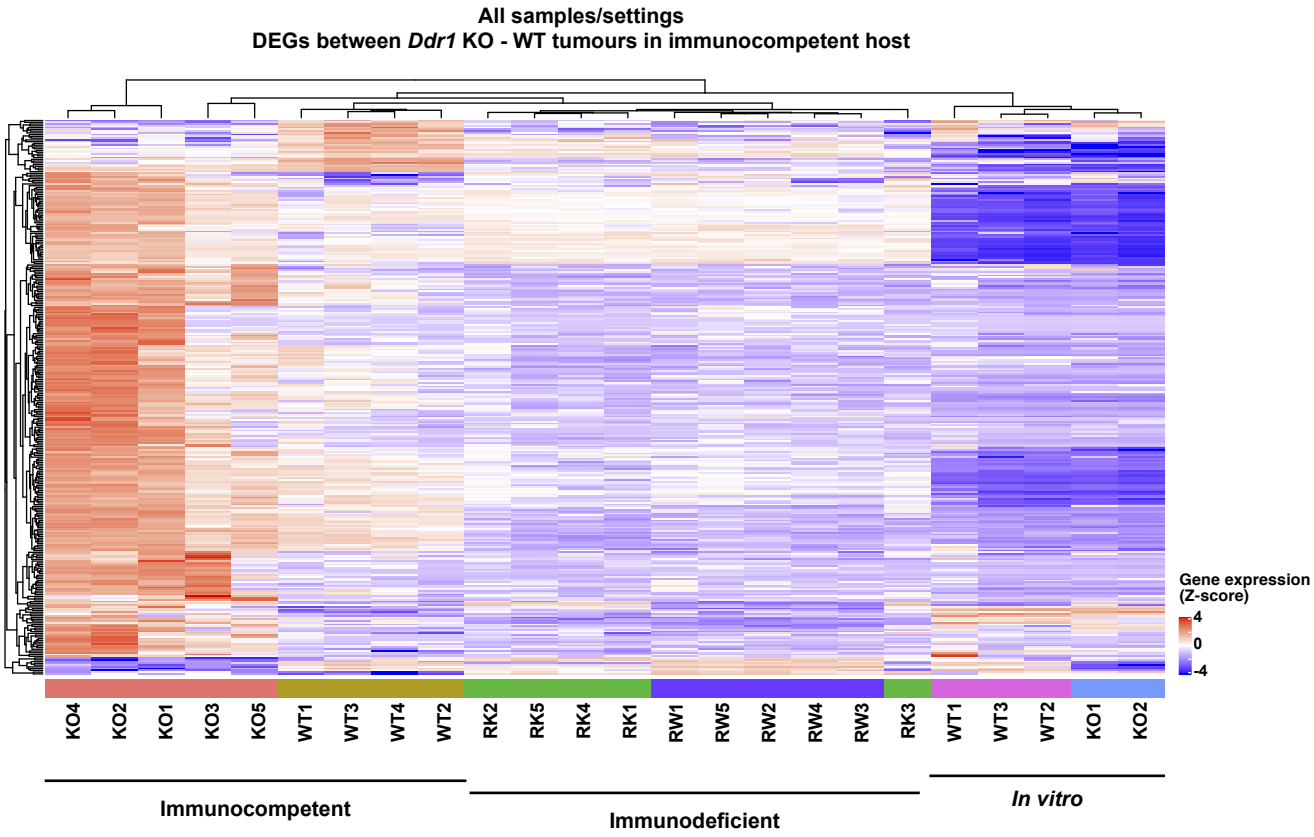
**Supplementary Figure 6.** DEGs between *Ddr1*-KO and WT tumours/cells



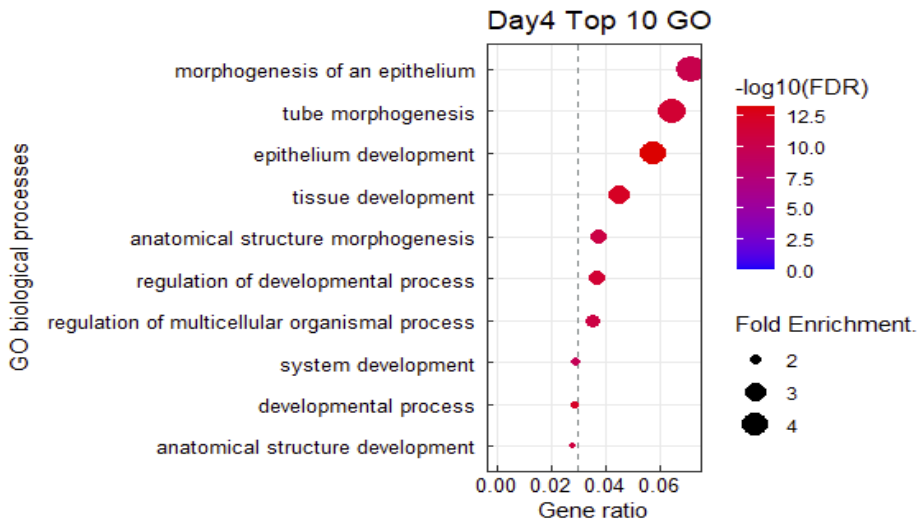
**Supplementary Figure 6. DEGs between *Ddr1*-KO and WT tumours/cells.** Left panels, unsupervised hierarchical clustering of DEGs (FDR-adjusted $p < 0.05$) in each setting (top, immunocompetent host; middle, immunodeficient host; bottom, E0771 cells *in vitro*). Right panels, Volcano plots of differential gene expression between *Ddr1*-KO and WT tumours/cells. Genes are plotted in different colours depending on their significance and absolute $\log_2$ fold-change (inset). The names of the 10-top differentially expressed genes in each direction and setting are indicated. The complete lists of DEGs are provided in Supplementary Table 2.

**Supplementary Figure 7.** Profiles of DEGs from immunocompetent host tumours and GO annotations

**a**

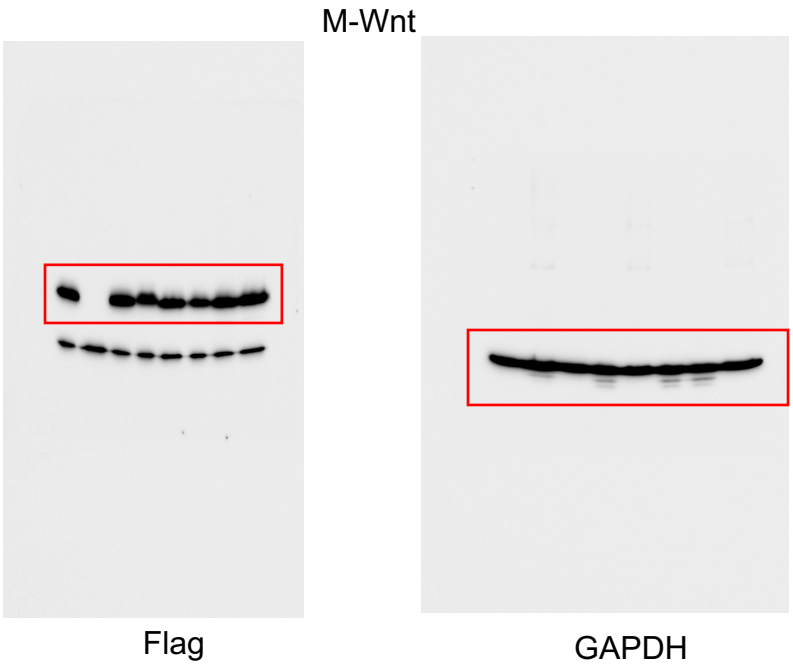


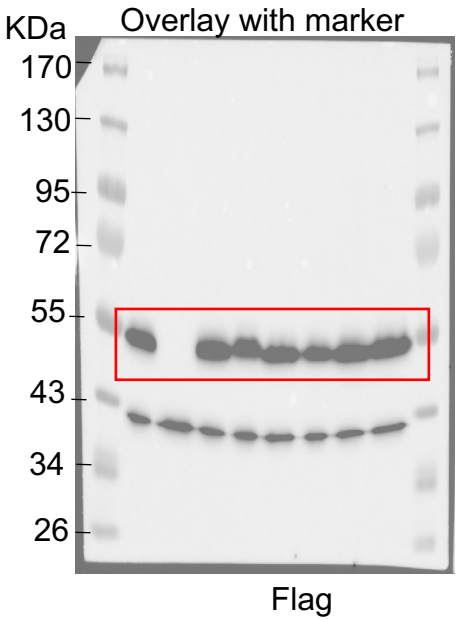

**b**

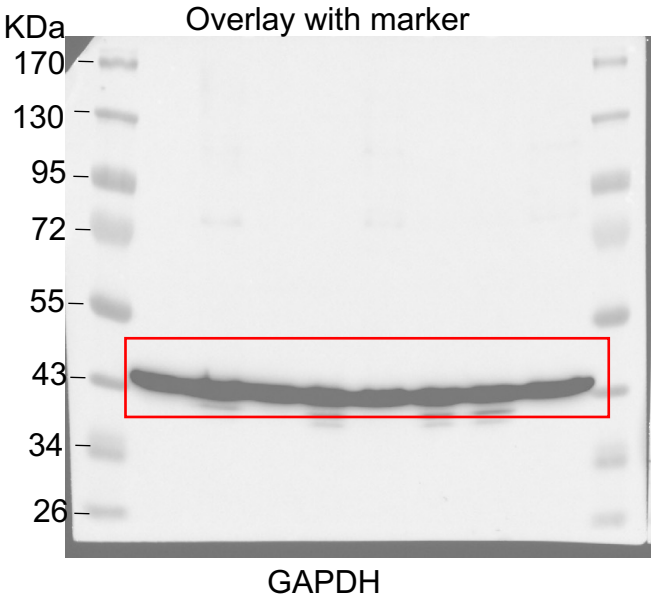


**Supplementary Figure 7. Profiles of DEGs from immunocompetent host tumours and GO annotations.** (**a**) Unsupervised hierarchical clustering of all settings/samples using DEGs identified in the comparison between *Ddr1*-KO and WT tumours developed in immunocompetent host. (**b**) GO analysis of immunocompetent host-unique DEGs.

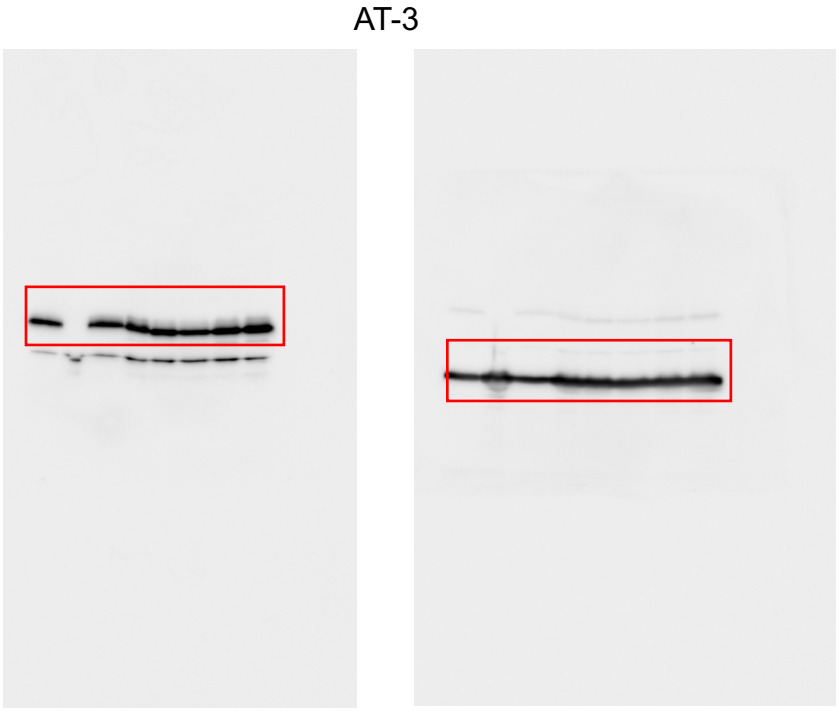
**Supplementary Figure 8.** Gel source data for Extended Data Figure 5c

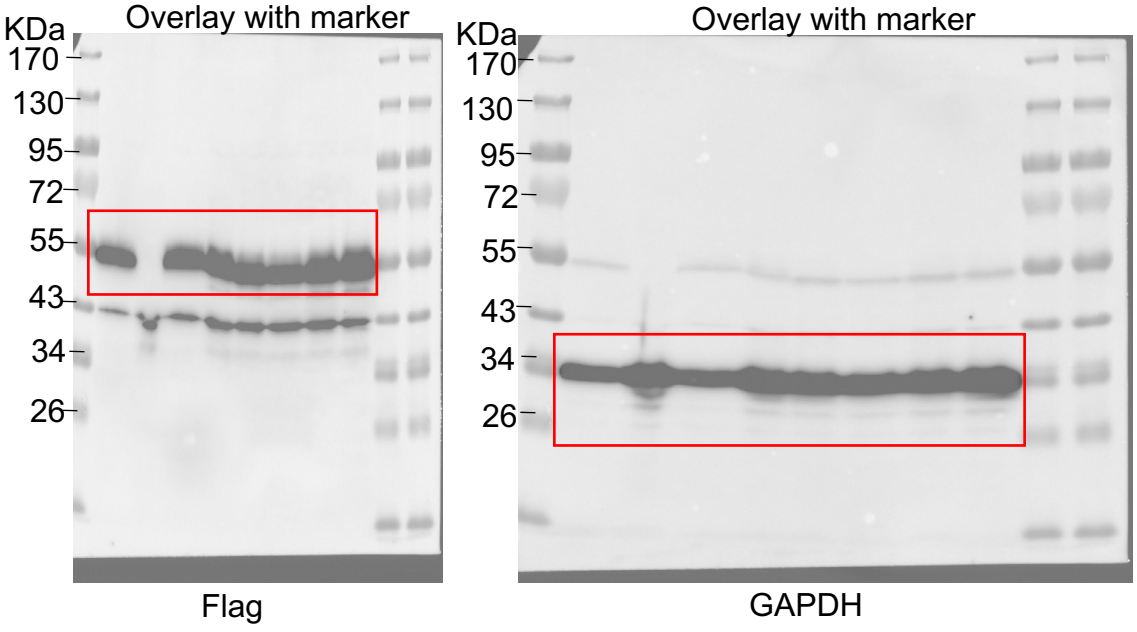


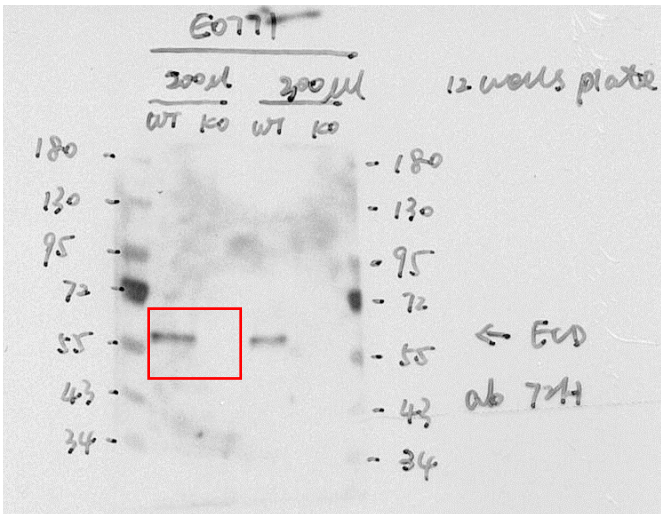
**Supplementary Figure 9.** Gel source data for Extended Data Figure 5d



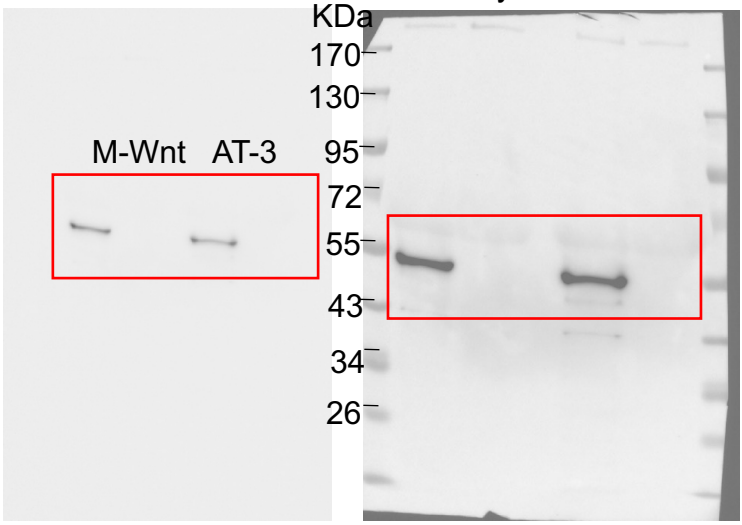
**Supplementary Figure 10.** Gel source data for Extended Data Figure 5g

Conditioned Medium:



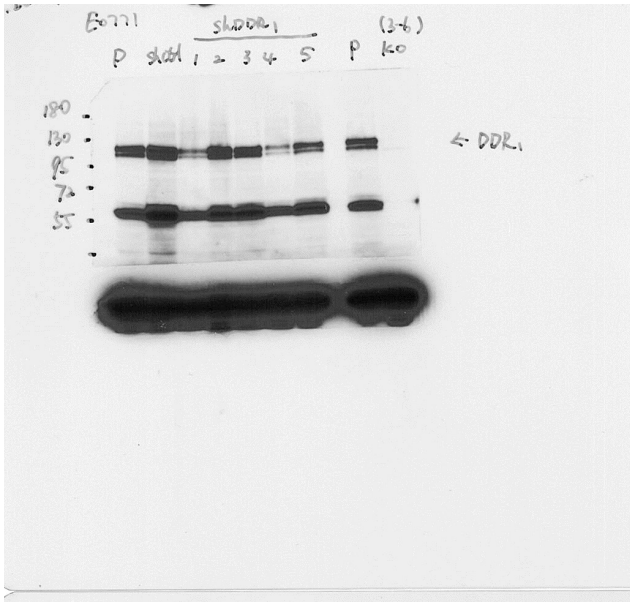

DDR1 ECD

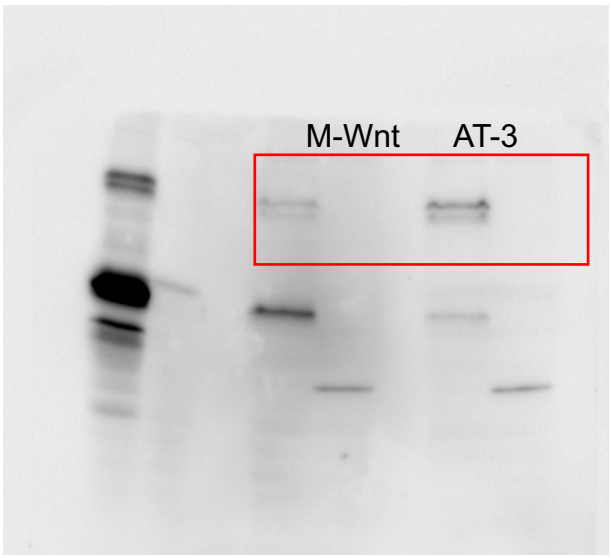
Overlay with marker



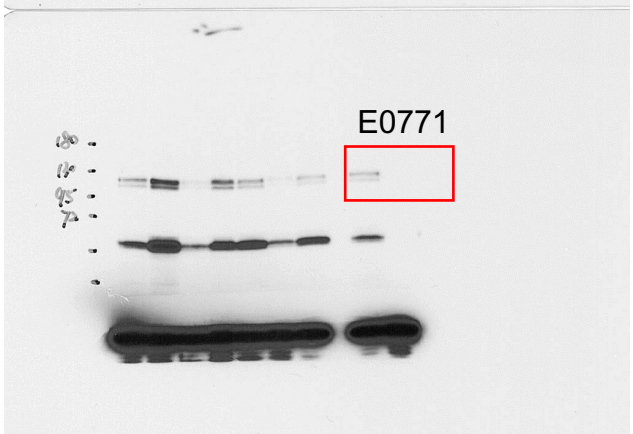

DDR1 ECD

DDR1 ECD

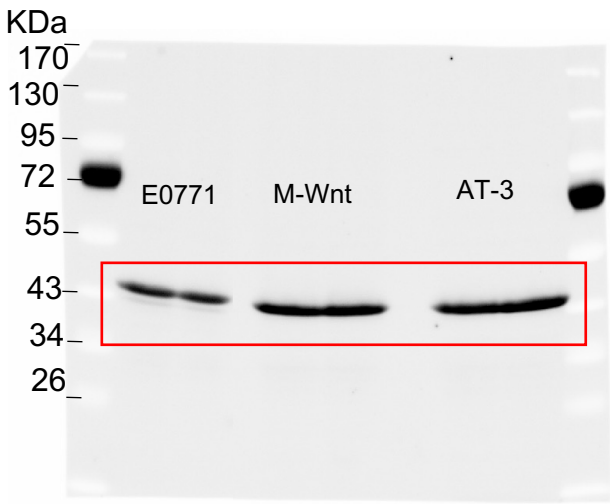



FL DDR1



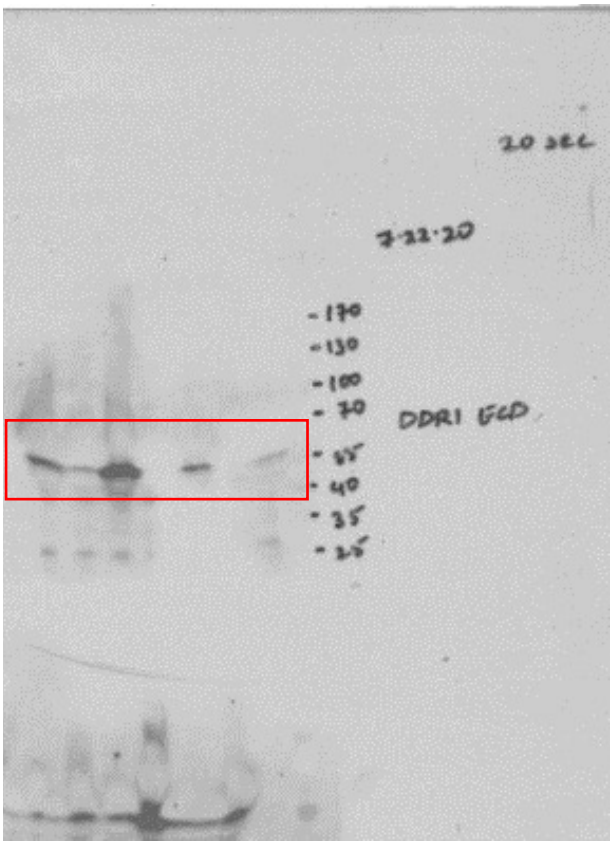

FL DDR1




β-ACTIN

**Supplementary Figure 11.** Gel source data for Extended Data Figure 5h

Conditioned Medium




DDR1 ECD

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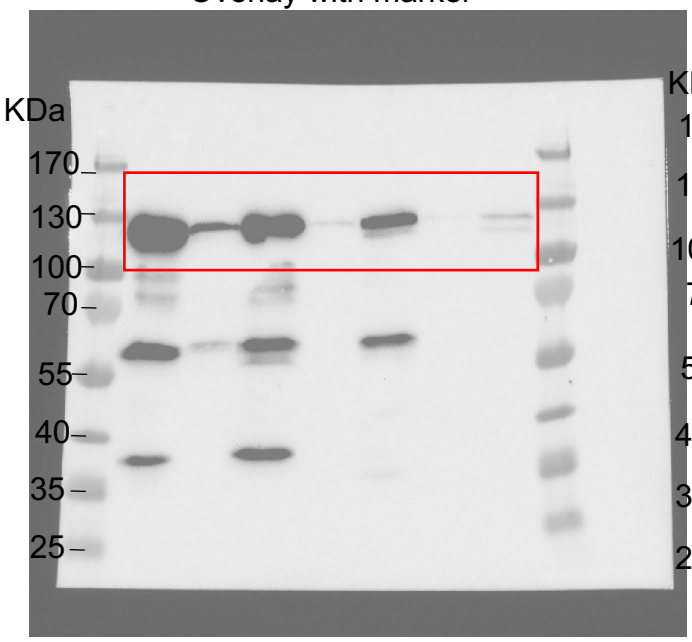


FL DDR1

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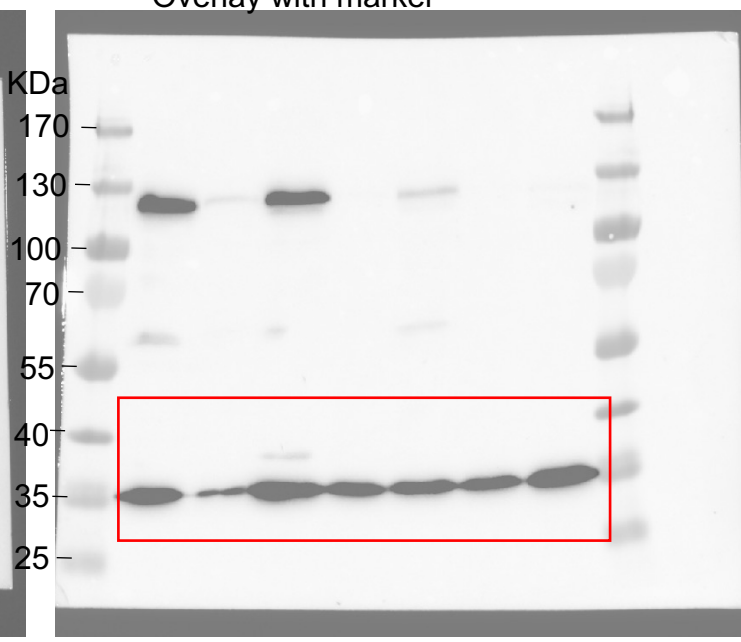
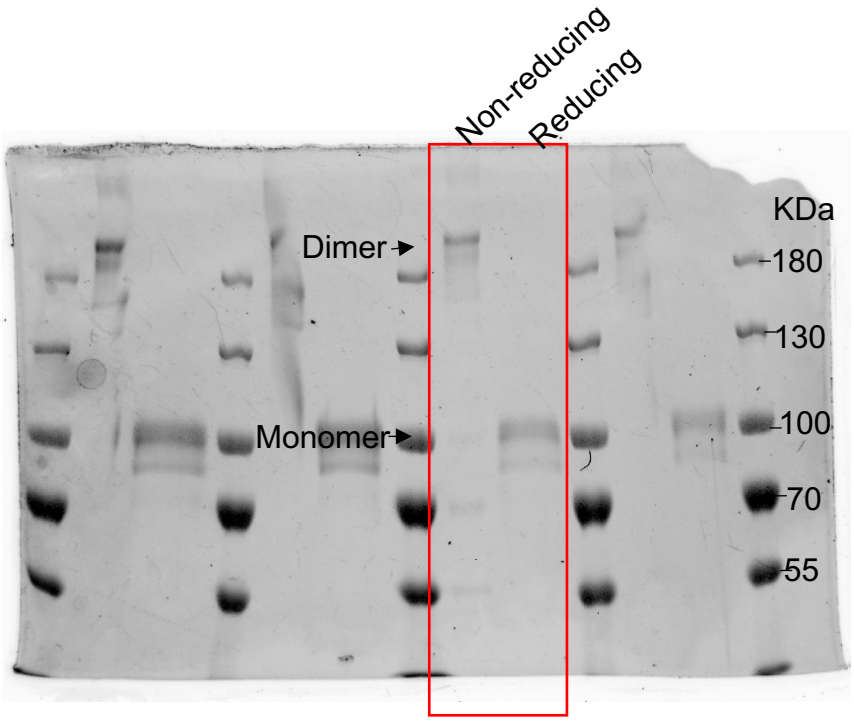


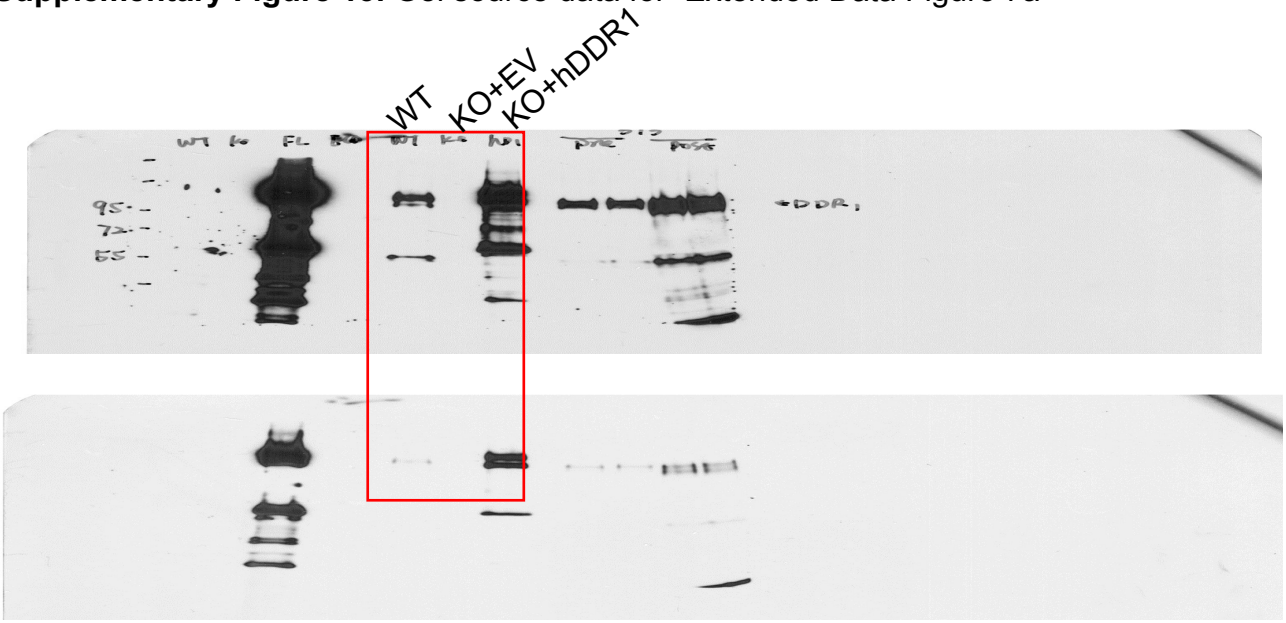

GAPDH (probed after stripping)

**Supplementary Figure 12.** Gel source data for Extended Data Figure 5i




Coomassie Gel Staining

**Supplementary Figure 13.** Gel source data for Extended Data Figure 7a

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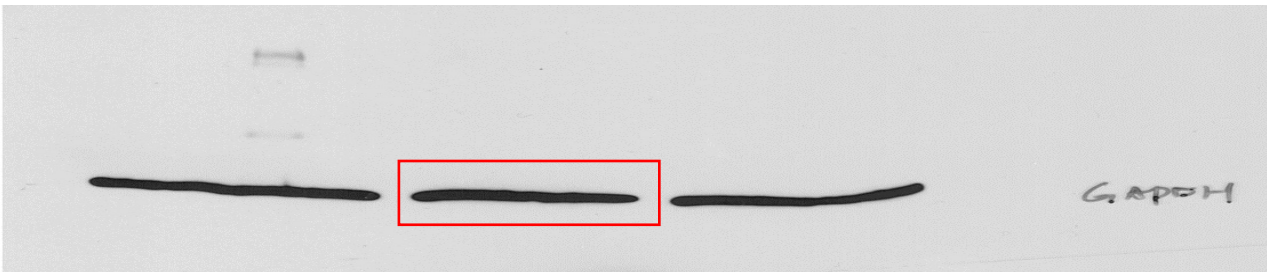
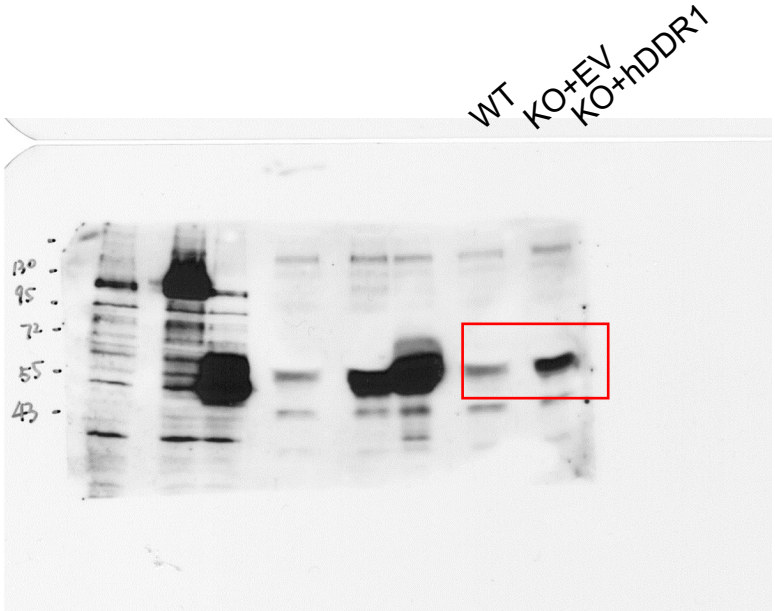



GAPDH




DDR1 ECD

**Supplementary Figure 14.** GO analysis of DEGs from RNA-seq of E0771 KO+huDDR1 tumours, treated with control IgG and anti-DDR1 antibody (#9) (n=4 each group; harvested on day 6 after antibody administration).