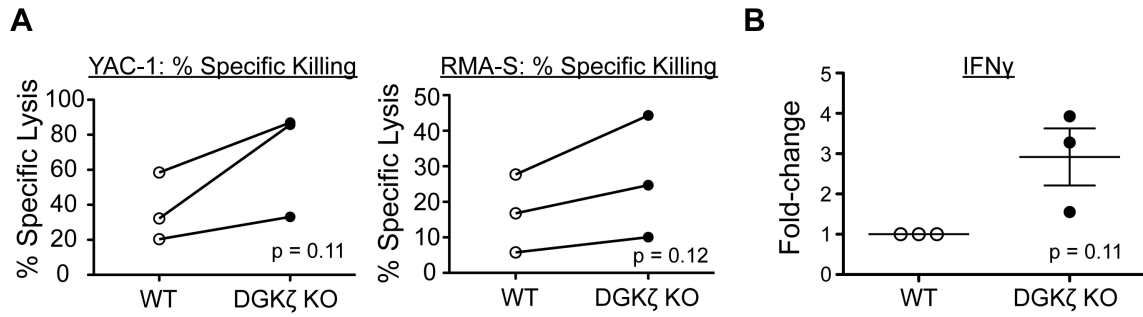


**Supplementary Figure 1: DGK $\zeta$  KO NK cells do not degranulate or produce IFN $\gamma$  spontaneously or when cultured with IL-2 alone.** A) Splenocytes from WT or DGK $\zeta$  KO mice were cultured in the presence or absence of IL-2 with Brefeldin A and anti-CD107a antibody for 6 hours. The proportion of NK cells (CD3<sup>-</sup>DX5<sup>+</sup>NKp46<sup>+</sup>) labeled with anti-CD107a antibody and B) intracellular anti-IFN $\gamma$  antibody is shown. N=8 from 5 independent experiments. Statistical significance was analyzed by Student's t-test. NS = not significant.



**Supplementary Figure 2: DKGζ KO LAKs are more likely than WT controls to kill targets and produce IFNγ upon co-culture with tumor cell lines.** A) Compiled data from Fig 2B showing % specific killing of each cell line by both WT and DGKζ KO LAKs at the highest effector to target ratios (40:1 for YAC-1, and 20:1 for the RMA-S) are plotted. B) Compiled data from Fig 2C, showing the fold change in IFNγ production by DGKζ KO LAKs as compared to WT controls when challenged with the YAC-1 cell line are plotted. Statistical significance was analyzed by Student's t-test.

**Supplementary Table I:** Inhibitory and activating receptor expression on WT versus DGK  $\zeta$  KO NK cells.

Receptor	% of WT <sup>a</sup>	% of DGK $\zeta$ KO	P <sup>c</sup>	MFI on WT <sup>b</sup>	MFI on DGK $\zeta$ KO	P
Ly49A	14 $\pm$ 0.5	12 $\pm$ 0.5	<0.01	7383 $\pm$ 282	7660 $\pm$ 298	NS
Ly49C	48 $\pm$ 0.6	43 $\pm$ 0.9	<0.001	2132 $\pm$ 279	2297 $\pm$ 371	NS
Ly49I	43 $\pm$ 0.9	41 $\pm$ 1.3	NS	1418 $\pm$ 45	1431 $\pm$ 43	NS
Ly49G2	41 $\pm$ 1.1	41 $\pm$ 0.5	NS	10860 $\pm$ 465	11580 $\pm$ 337	NS
Ly49D	58 $\pm$ 0.8	56 $\pm$ 0.6	NS	12070 $\pm$ 605	13030 $\pm$ 729	NS
Ly49H	61 $\pm$ 0.7	63 $\pm$ 1.1	NS	2937 $\pm$ 52	2992 $\pm$ 70	NS
NKG2D	99 $\pm$ 0.03	99 $\pm$ 0.06	NS	216 $\pm$ 40	209 $\pm$ 61	NS
2B4	99 $\pm$ 0.05	94 $\pm$ 1.4	<0.01	697 $\pm$ 89	496 $\pm$ 80	NS
NK1.1	100	100	NS	4079 $\pm$ 116	3778 $\pm$ 266	NS

<sup>a</sup>The percentage of NK cells expressing various NK cell receptors as well as the <sup>b</sup>MFI of the receptor on WT versus DGK  $\zeta$  KO NK cells is shown.

<sup>c</sup>P values were calculated using Student's t-test. NS = Not Significant. N = 7-8 per row, except 2B4, where N = 5-6.