



Supplementary Figure 1.  $2F_o-F_c$  electron density contoured at  $0.7\sigma$  from annealed omit maps. (a) Asn297-linked *N*-glycans on  $Fc\gamma RIIIa$ -bound GASDALIE Fc. (b) Asn45- and Asn162-linked *N*-glycans on  $Fc\gamma RIIIa_{F158}$  (c) G236/S239D/A330L/I332E mutations in the  $Fc\gamma RIIIa$ -bound GASDALIE Fc. (d) Unbound GASDALIE Fc. Ordered glycan residues in panels A and B are shown as colored sticks (fucose, orange; GlcNAc, blue; mannose, green; galactose, yellow) with schematic versions of the ordered portions of the Fc *N*-glycans on each chain shown in panel a (fucose, orange triangle; GlcNAc, blue squares; mannose, green circles; galactose, yellow circle).

**Supplementary Table 1.** Data collection and refinement statistics

	<b>GASDALIE Fc:FcyRIIIa<sub>F158</sub></b>	<b>GASDALIE Fc</b>
Data Collection		
Space group	P2 <sub>1</sub> 2 <sub>1</sub> 2 <sub>1</sub>	P2 <sub>1</sub> 2 <sub>1</sub> 2 <sub>1</sub>
Cell dimensions		
<i>a</i> , <i>b</i> , <i>c</i> (Å)	74.38, 94.50, 108.67	49.32, 79.13, 137.62
$\alpha$ , $\beta$ , $\gamma$ (°)	90.0, 90.0, 90.0	90.0, 90.0, 90.0
Resolution (Å)	71.31 - 3.13 (3.24 - 3.12)	46.43 - 2.39 (2.47 - 2.38)
R <sub>merge</sub>	0.11 (1.26)	0.14 (0.58)
Completeness (%)	100.00 (100.00)	100.00 (100.00)
Redundancy	2.0 (2.0)	1.9 (1.9)
I/ $\sigma$ I	7.52 (0.61)	6.62 (1.41)
CC <sub>1/2</sub> (%)	99.9 (79.5)	99.2 (88.5)
Refinement		
Resolution (Å)	3.13	2.39
No. reflections	28106	31591
R <sub>work</sub> /R <sub>free</sub>	.270/.296	.241/.258
No. atoms		
Protein	4507	3291
Ligand/ion	248	210
Water	0	93
Average B factor	35.00	58.10
rmsd		
Bond lengths (Å)	0.015	0.012
Bond angles (°)	1.46	1.25

Statistics for the highest-resolution shell are shown in parentheses.