A comprehensive analysis of the binding of anti-KIR antibodies to activating KIRs

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Analysis of killer cell immunoglobulin-like receptor (KIR) expression has been notoriously difficult because of the cross-reactivity of available antibodies, in particular between activating and inhibitory isoforms. We undertook a comprehensive study of available anti-KIR antibodies binding to activating KIRs (a-KIRs). Using cell lines stably transfected with a-KIRs (KIR2DS1-S5 and KIR3DS1), we confirmed documented binding specificities. In addition, we show that clones HPMA4 and 143211-previously assumed to be specific for KIR2DS1/L1 and KIR2DL1, respectively-bind KIR2DS5 and KIR2DS3 (HPMA4), and KIR2DS5 (143211). Other antibodies with previously undocumented binding were JJC11.6 (recognizing KIR2DS3) and 5.133 (recognizing all a-KIRs except KIR2DS1 and KIR2DS3). The novel KIR2DS5 reactivities were confirmed by blocking with soluble KIR-Fc fusion proteins, and by reverse transcriptase-PCR analysis of sorted primary natural killer cells. In conclusion, we show formerly undocumented binding properties of anti-KIR antibodies. These cross-reactivities should be taken into account when analyzing KIR expression.Genes and Immunity advance online publication, 31 October 2013; doi:10.1038/gene.2013.58.
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