The bispecific innate cell engagers AFM13 (CD30/CD16A) and AFM24 (EGFR/CD16A) increase the fraction of tumor target-responsive NK cells and boost serial killing

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INTRODUCTION

Bispecific natural killer (NK) cell engagers have emerged as a promising therapeutic strategy for innate cell activation and tumor killing through antibody-dependent cellular cytotoxicity (ADCC). AFM13 binds CD30 and CD16A, allowing for the killing of CD30-expressing tumor cells or cells in microenvironments.


Wells with target death [%]

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<th>Time [h]</th>
<th>Ctrl</th>
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<th>NK</th>
<th>NK + BAT.</th>
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From suspension to adherent target cells

Shedding inhibition with bispecific engagers conjugates and induced clumping in suspension cells. We wanted to investigate if this mechanism was shown. Multiple paired t test was used for statistical analysis.

AFM13 boosts ADCC and serial killing on CD30 low targets

AFM13 increased NK killing efficiency in both CD30/CD16A-high (KARPAS-299, top row) and CD30-low NK64, bottom row expressing target cells. Microchip killing assays showed increased percentages of dead target cells in presence of AFM13 compared to Ctrl (-) [4]. Data compensated for spontaneous target death showed that AFM13 increased the percentage of cytotoxic NK cells (C). Mean values with SD from 3-5 independent donors are shown. Multiple panel test was used for statistical analyses.

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CONCLUSIONS

Treatment with bispecific CD30/CD16A AFM13 and AFM24 increased the populations of cytotoxic NK cells and boosted ADCC and serial killing, indicating that these bispecific engagers have the potential to further improve on the efficacy and induced NK cell detachment leading to formation of clusters that potentially could restrict NK cell migration and further boost cell killing.