

## Supplementary methods

All clinical trials were extracted from clinicaltrials.gov in June 2019 using selected keywords and search filters, as specified in the Supplementary material. 2760 records emerged using these search criteria, from which 119 clinical trials were selected for analysis considering the inclusion/exclusion criteria specified above.

Search criteria on Clinicaltrials.gov:

“cancer” AND (“atezolizumab” OR “avelumab” OR “pembrolizumab” OR “nivolumab” OR “durvalumab” OR “cemiplimab” OR “PDR001” OR “41BB” OR “41BBL” OR “A2AR” OR “B7H3” OR “B7H4” OR “BTLA” OR “CD2” OR “CD27” OR “CD30” OR “CD30L” OR “CD40” OR “CD40L” OR “CD47” OR “CD48” OR “CD58” OR “CD70” OR “CD73” OR “CD112” OR “CD134” OR “CD137” OR “CD154” OR “CD155” OR “CD200” OR “CD226” OR “CD252” OR “CEACAM” OR “DR3” OR “GITR” OR “GITRL” OR “HVEM” OR “IDO1” OR “KIR” OR “LAG3” OR “LFA” OR “NGK2A” OR “OX40” OR “OX40L” OR “SIRP” OR “SLAM” OR “TIGIT” OR “TIM3” OR “TLR9” OR “VISTA” OR “platform” OR “umbrella” OR “basket”)

+ Filtered for “interventional” and (“phase 1” OR “phase2” OR “early phase 1”)