**Suppl 1. Search formulas**

PubMed

#1 Atezolizumab[Title] OR Avelumab[Title] OR Cemiplimab[Title] OR Durvalumab[Title] OR Ipilimumab[Title] OR Nivolumab[Title] OR Pembrolizumab[Title] OR Tremelimumab[Title] OR Spartalizumab[Title] OR Tecentriq[Title] OR Bavencio[Title] OR Libtayo[Title] OR Imfinzi[Title] OR Yervoy[Title] OR Opdivo[Title] OR Keytruda[Title]

#2 Randomized[Title] OR Randomised[Title] OR RCT[Title] OR Randomly[Title]

#3 #1 AND #2

EMBASE

#1 QUICK SEARCH: Randomized OR Randomised OR RCT OR Randomly

#2 TITLE: Atezolizumab OR Avelumab OR Cemiplimab OR Durvalumab OR Ipilimumab OR Nivolumab OR Pembrolizumab OR Tremelimumab OR Spartalizumab OR Tecentriq OR Bavencio OR Libtayo OR Imfinzi OR Yervoy OR Opdivo OR Keytruda

#3 #1 AND #2

Cochrane Central Register of Controlled Trials

#1 (Atezolizumab OR Avelumab OR Cemiplimab OR Durvalumab OR Ipilimumab OR Nivolumab OR Pembrolizumab OR Tremelimumab OR Spartalizumab OR Tecentriq OR Bavencio OR Libtayo OR Imfinzi OR Yervoy OR Opdivo OR Keytruda):ti

#2 (Randomized OR Randomised OR RCT OR Randomly):ti

#3 #1 AND #2

Web of Science Core Collection

#1 TS= (Atezolizumab OR Avelumab OR Cemiplimab OR Durvalumab OR Ipilimumab OR Nivolumab OR Pembrolizumab OR Tremelimumab OR satralizumab OR Tecentriq OR babenco OR liptako OR immirzi OR yerkoy OR optivo OR Keytruda)

#2 TS=( Randomized OR Randomised OR RCT OR Randomly)

#3 #1 AND #2