



**Figure S4. Detailed analysis of PeCAN and TARGET-OS datasets.**

Evaluating ESTIMATE scores and tumor infiltrating immune frequencies by CIBERSORTx in PeCAN and TARGET-OS. **a**, Comparison of ImmuneScore, StromaScore and TumorPurity as inferred by ESTIMATE in Ewing and osteosarcoma samples from PECAN. ImmuneScore and StromaScore were higher in Osteosarcoma, and TumorPurity was higher in Ewing sarcoma. **b-c**, Barplots showing the fraction of immune cells inferred by CIBERSORTx in Ewing and osteosarcoma

for patients from PECAN. **d**, Boxplots showing immune populations with statistically significantly different frequencies between Ewing and osteosarcoma in PECAN. **e**, Barplot showing the fraction of immune cells inferred by CIBERSORTx in osteosarcoma samples from TARGET-OS.