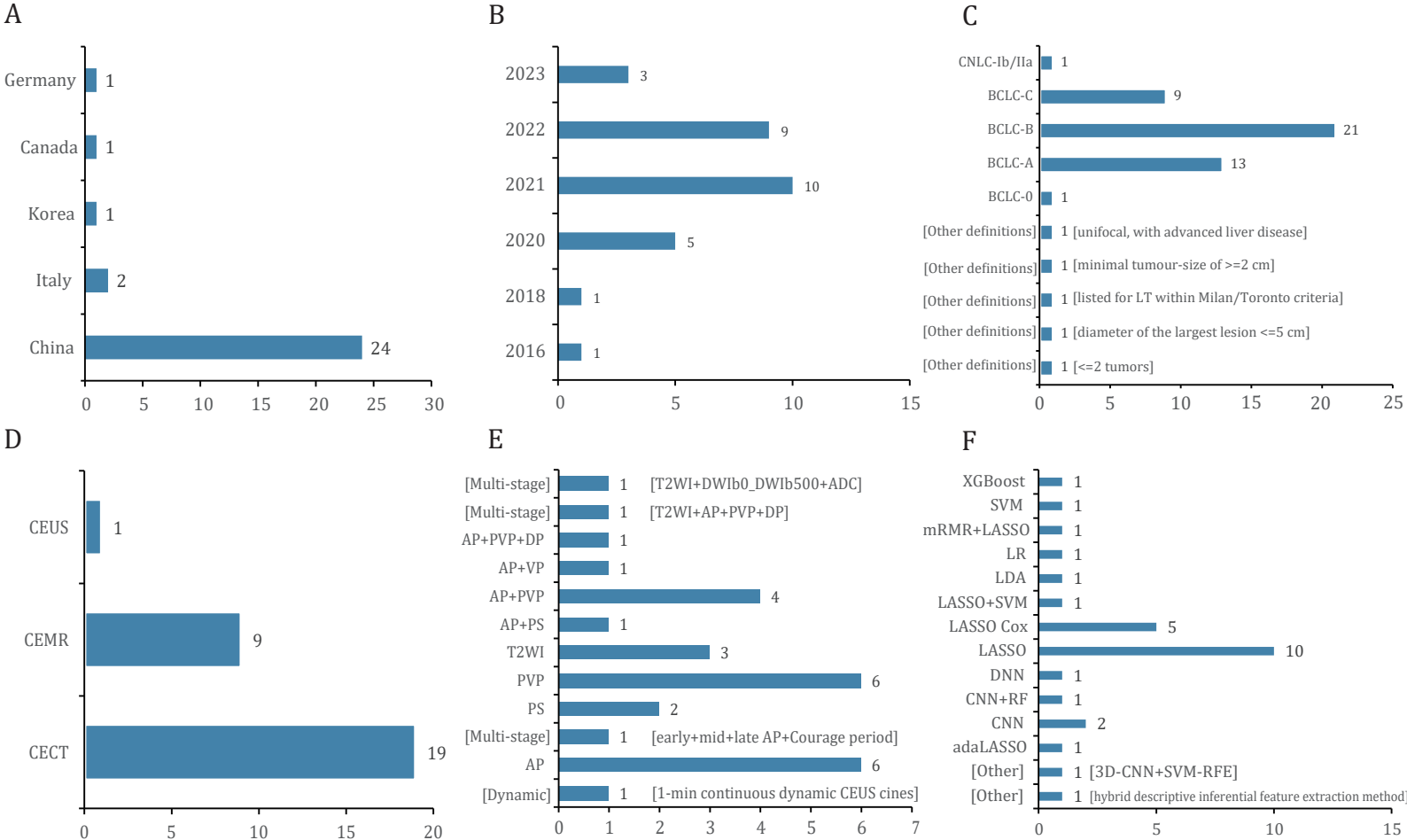
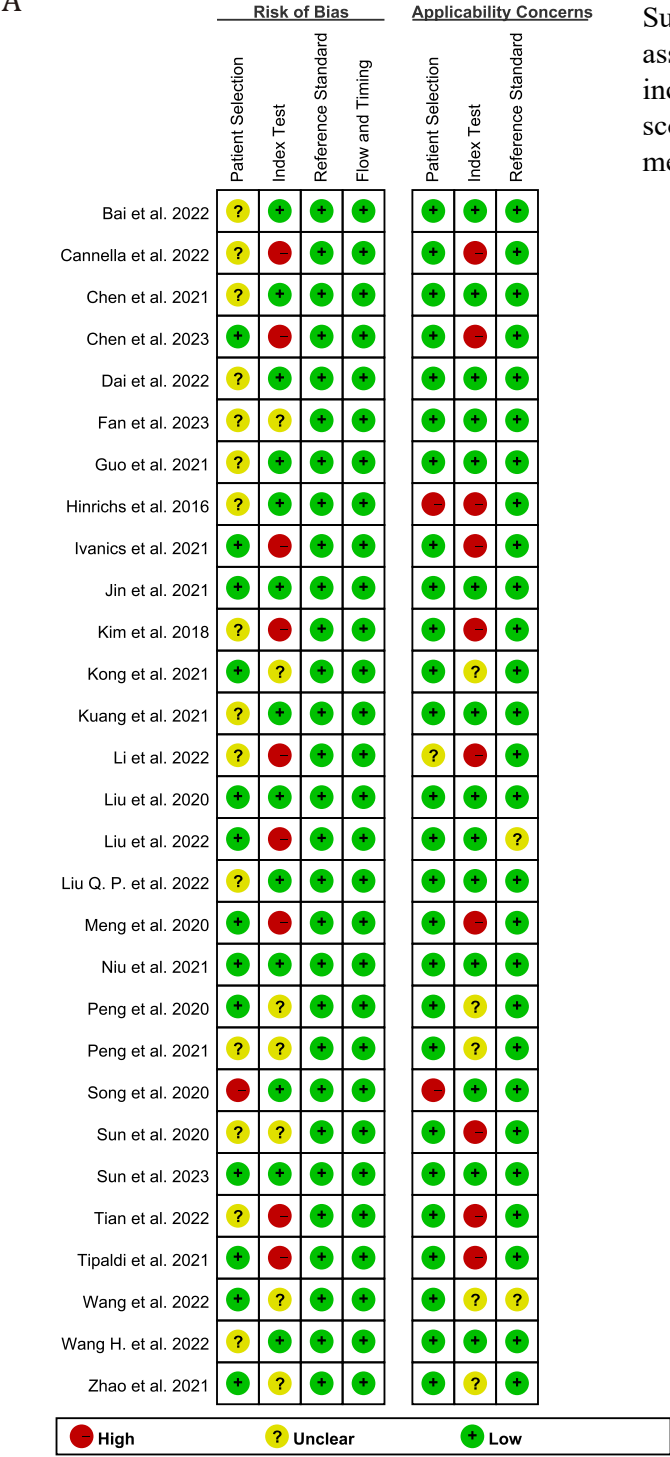




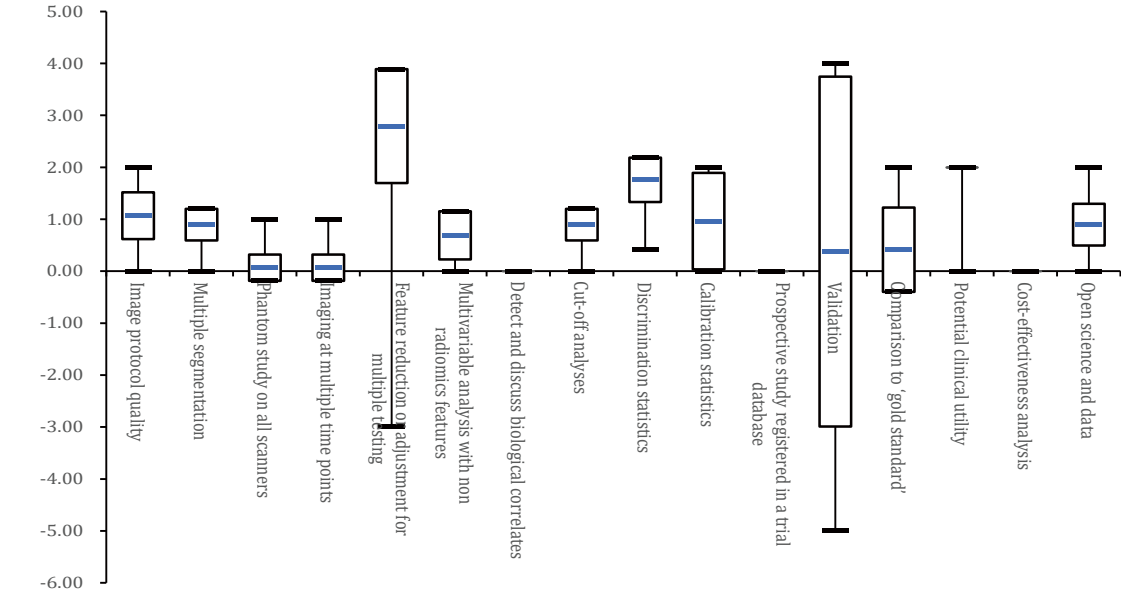
Supplementary Figure 1. Major Characteristics of Included Studies. (A-B) The number of published studies across (A) different countries and (B) years. (C) Frequency distribution of various tumor stages investigated in the included research, with reference to Barcelona Clinic Liver Cancer (BCLC) and China Liver Cancer Staging (CNLC). (D) Number of studies employing distinct imaging modalities, including contrast-enhanced computed tomography (CECT), contrast-enhanced magnetic resonance (CEMR), and contrast-enhanced ultrasound (CEUS). (E) Number of studies analyzing diverse phases/sequences of medical images, such as arterial phase (AP), plain scan (PS), and portal vein phase (PVP). (F) Number of studies utilizing different modelling algorithms, including convolutional neural network (CNN), least absolute shrinkage and selection operator (LASSO), extreme gradient boosting (XGBoost), logistic regression (LR), maximum correlation–minimum redundancy (mRMR), support vector machines (SVM), random forest (RF), deep-learning neural network (DNN), and linear discriminant analysis (LDA).

A

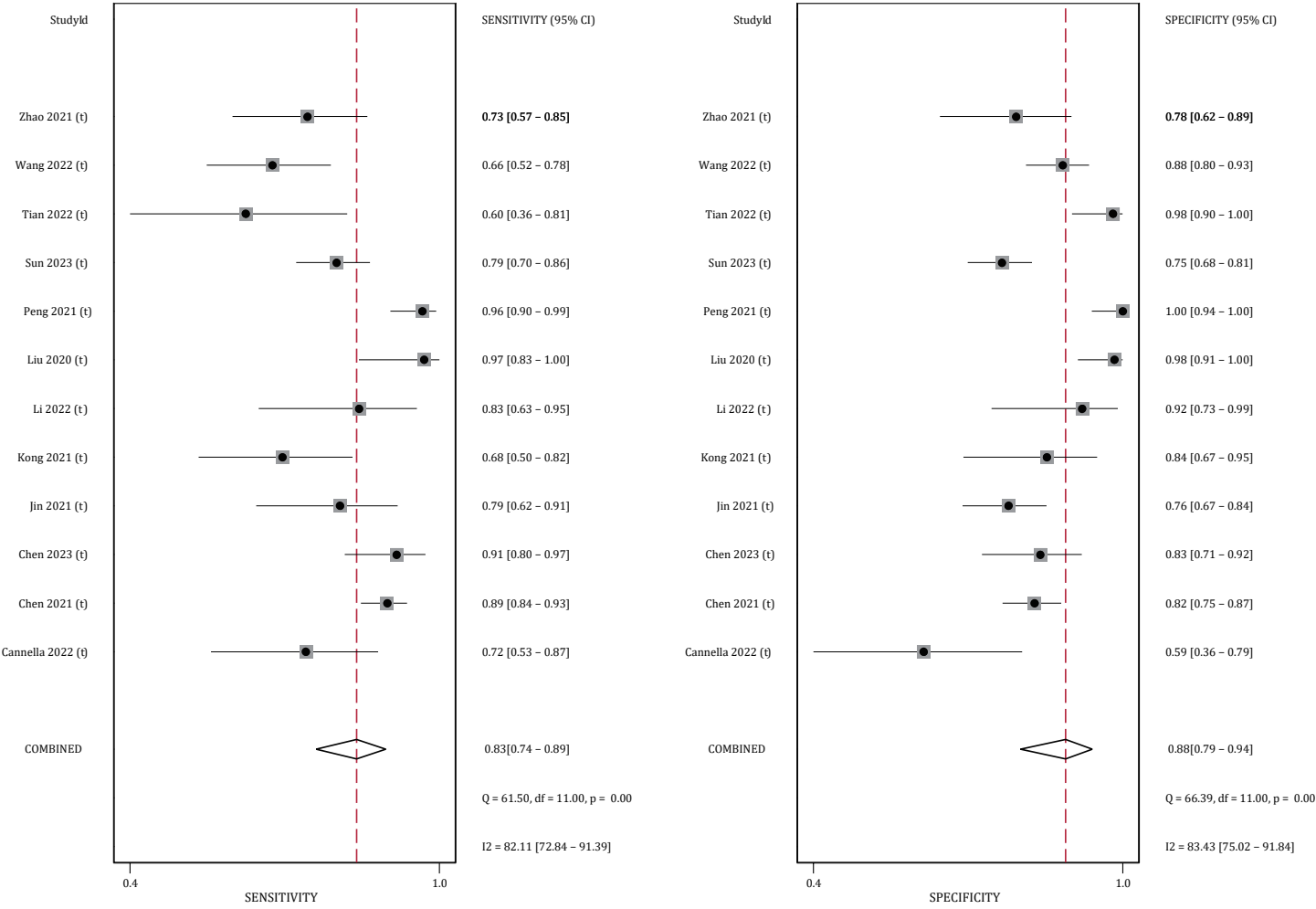


Supplementary Figure 2. (A) Details of QUADAS-2 quality assessment for included studies. (B) Details of RQS assessment for included studies, with minimum and maximum scores for each scoring item across all studies represented by black line segments and mean $\pm$ standard deviation depicted by boxes.

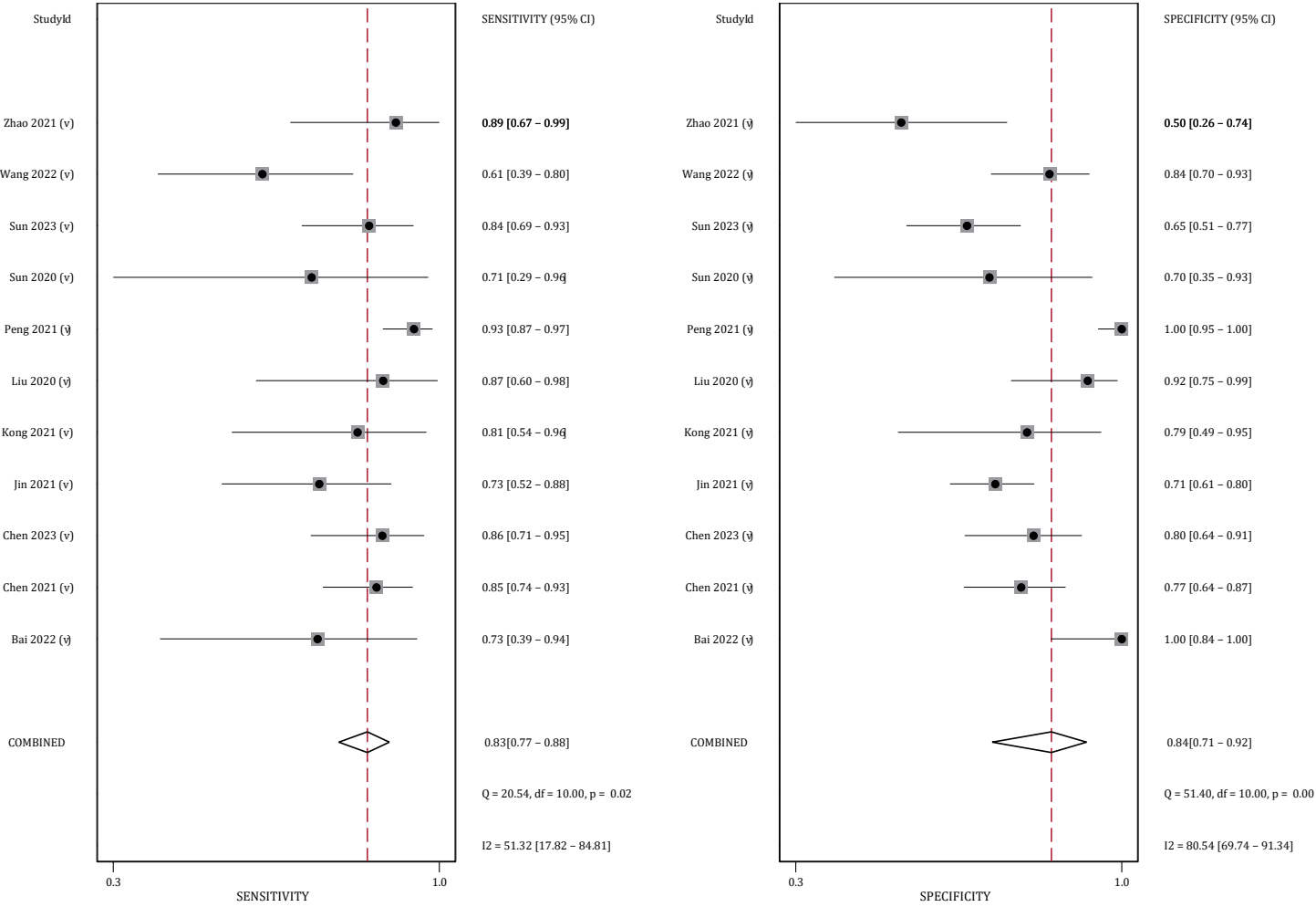
B



A

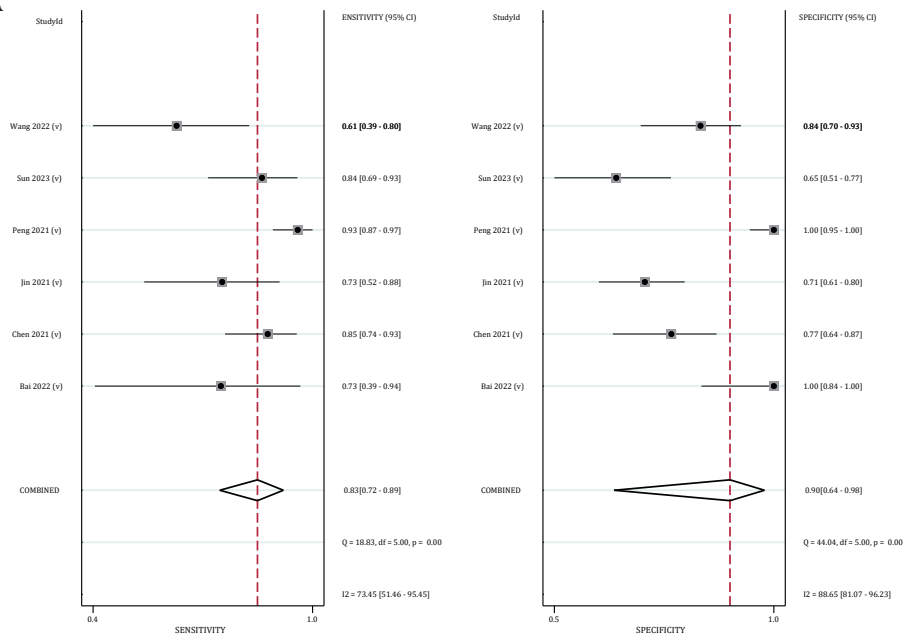


B



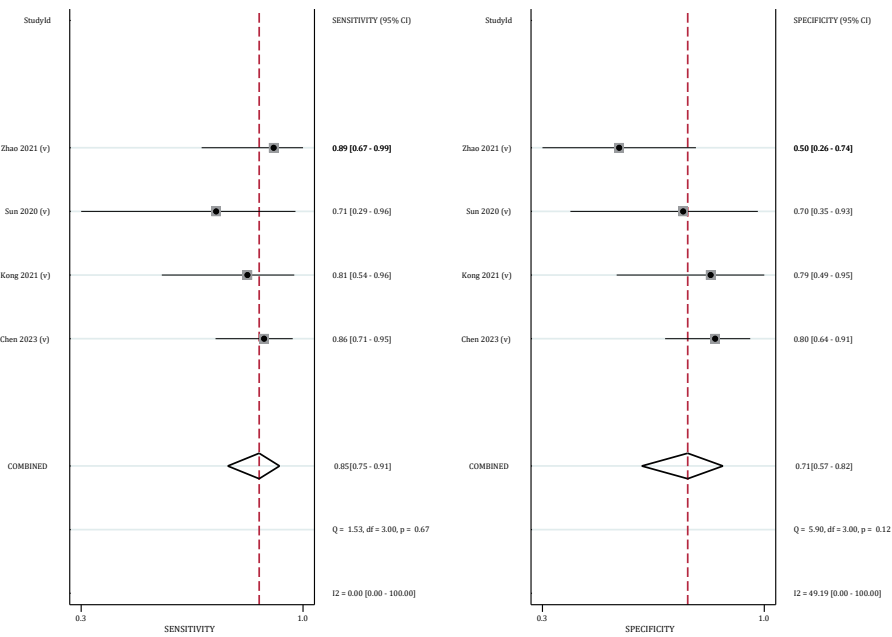
Supplementary Figure 3. Subgroup analysis of models in (A) training sets and (B) validation sets.

A

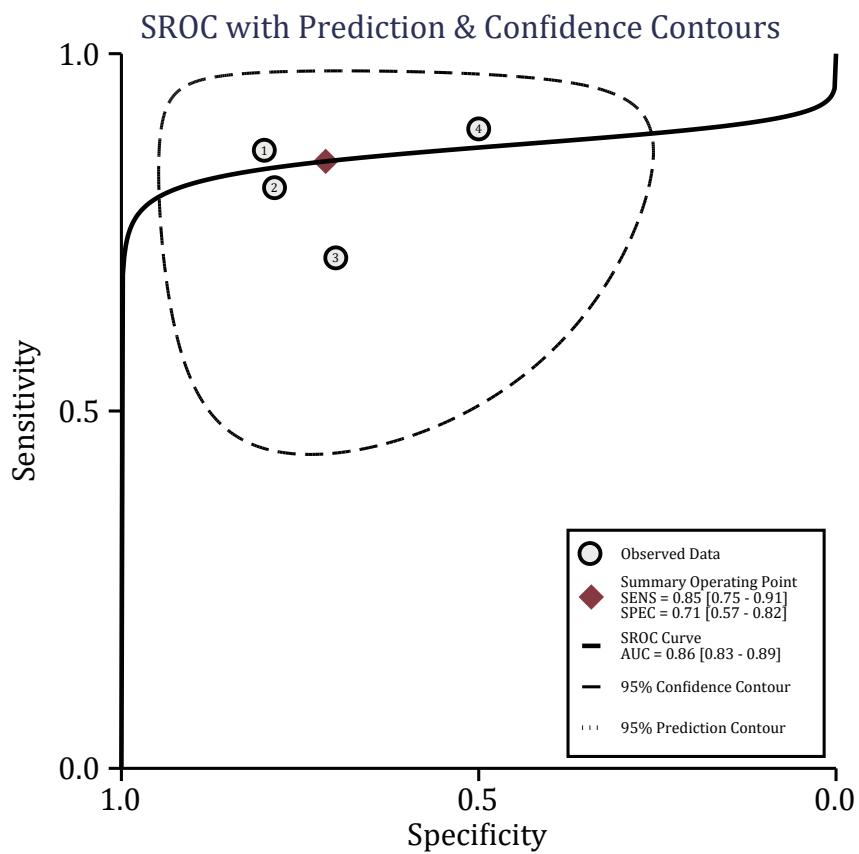


Supplementary Figure 4. Subgroup analysis of models based on (A) CT and (B) MR in validation datasets and (C) the summary ROC in the subgroup MR.

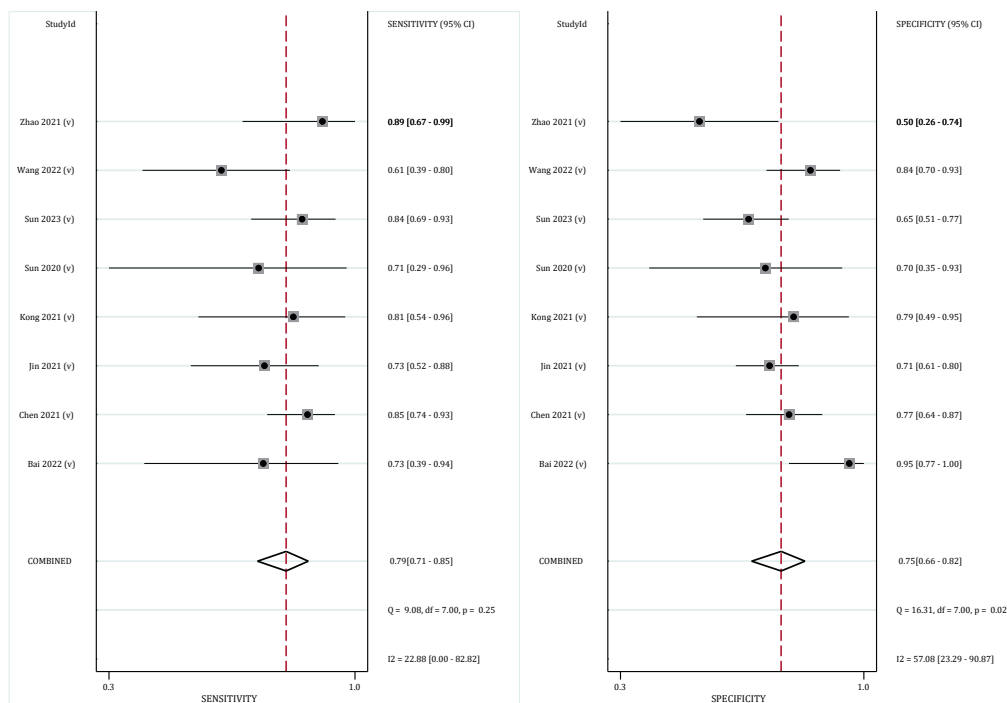
B



C

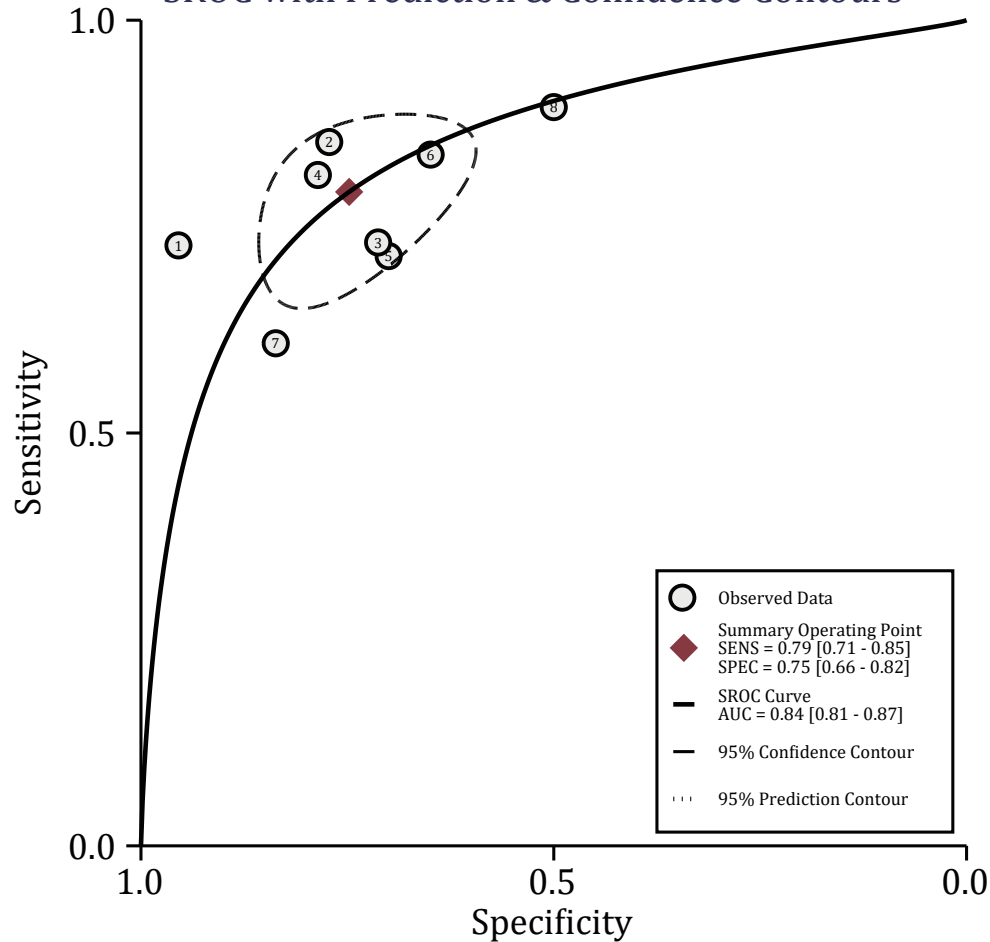


A

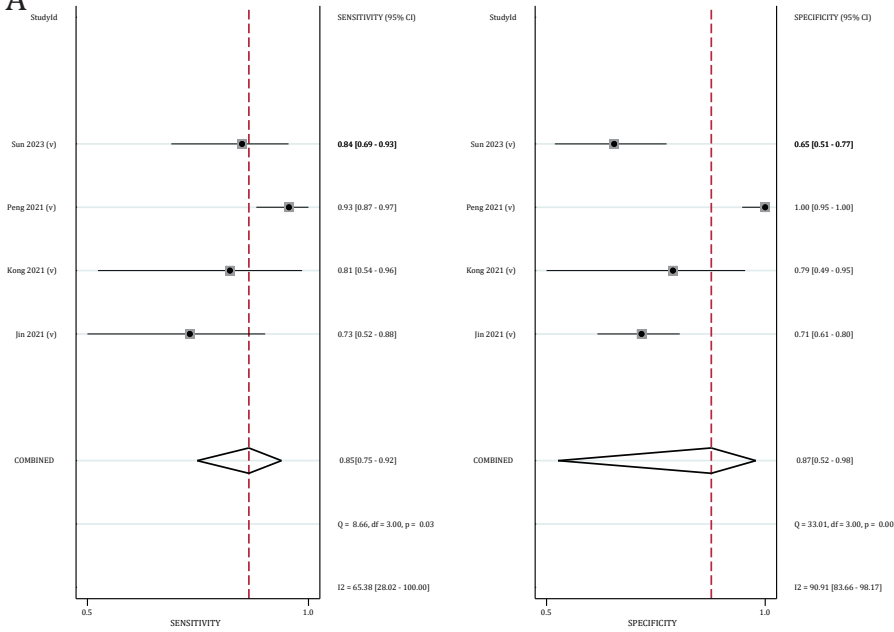


B

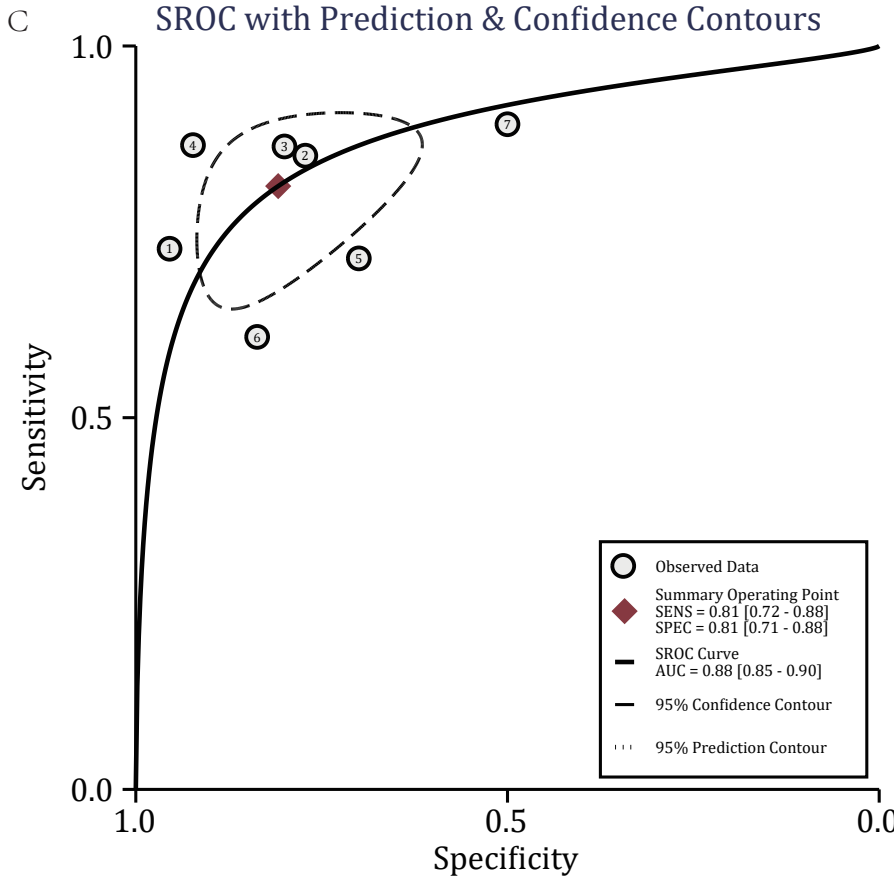
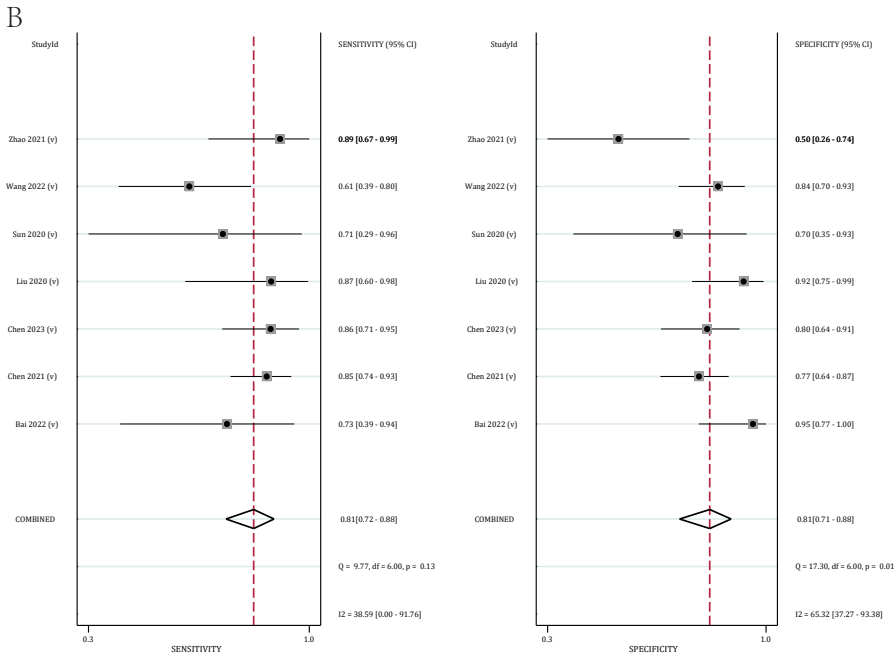
SROC with Prediction & Confidence Contours



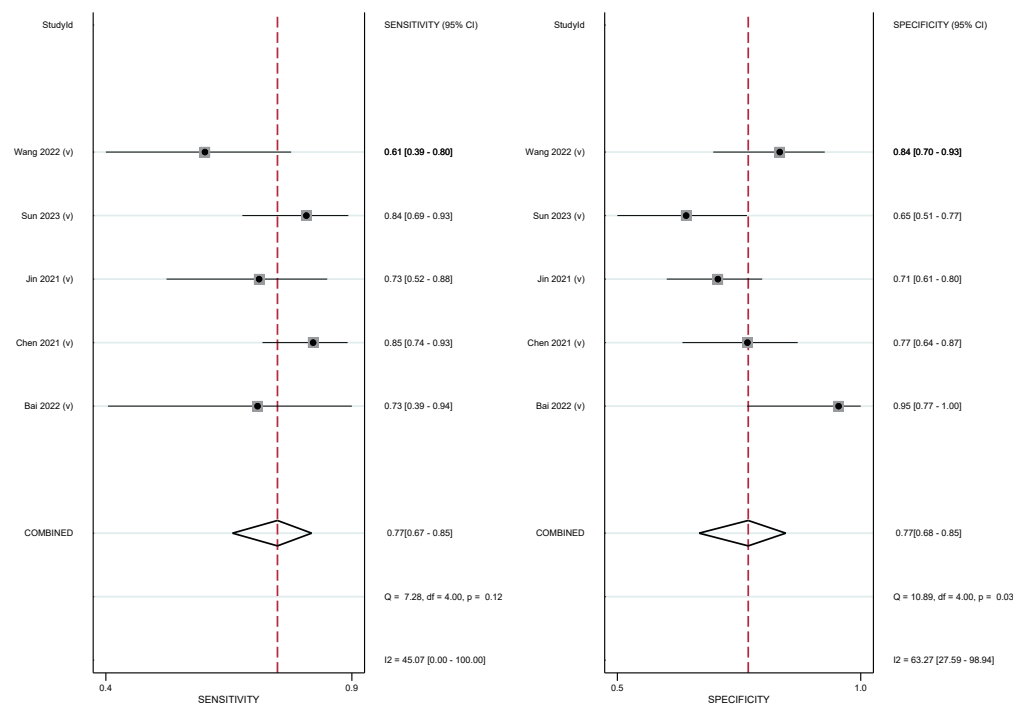
Supplementary Figure 5. Subgroup analysis of machine-learning-based models in (A) validation datasets and (B) the summary ROC in this subgroup.



Supplementary Figure 6. Subgroup analysis of models based on (A) single-phase and (B) multi-phase medical images in validation datasets and (C) the summary ROC in the latter subgroup.

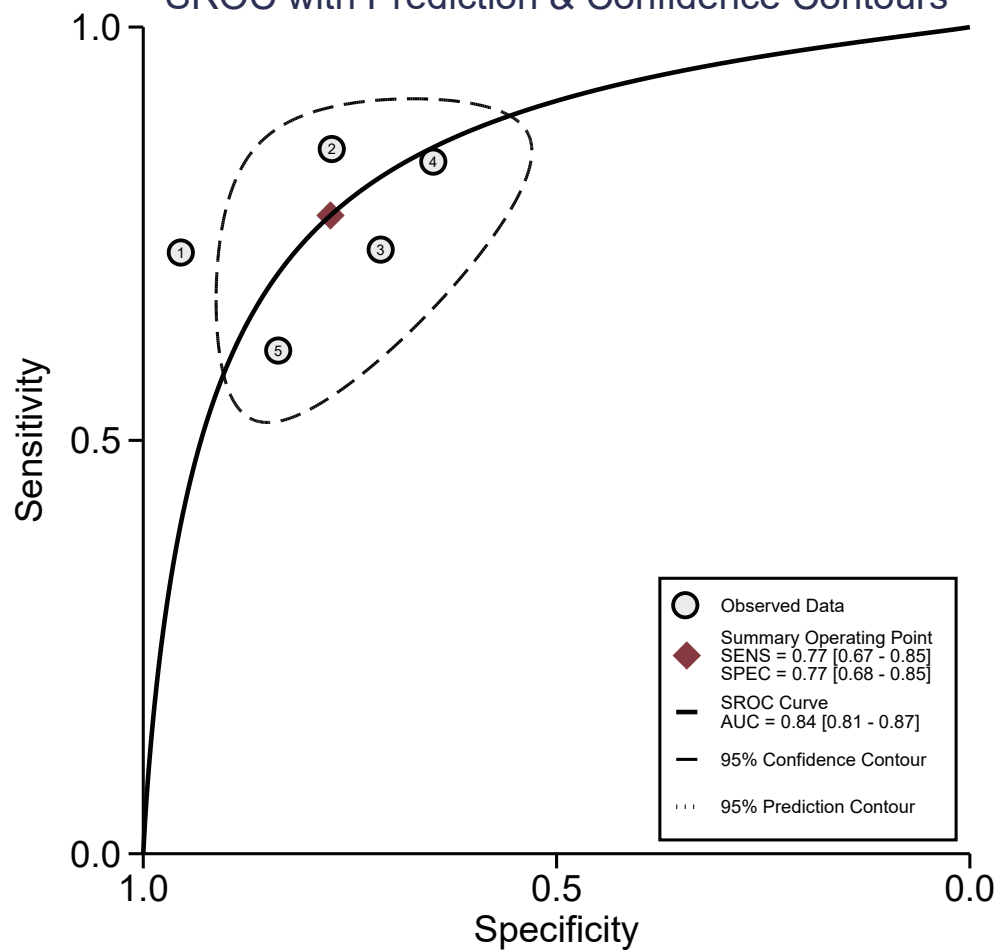


A



B

SROC with Prediction & Confidence Contours



Supplementary Figure 7. (A) Subgroup analysis of models based on CT and machine learning in validation datasets. (B) The summary ROC in this subgroup.