

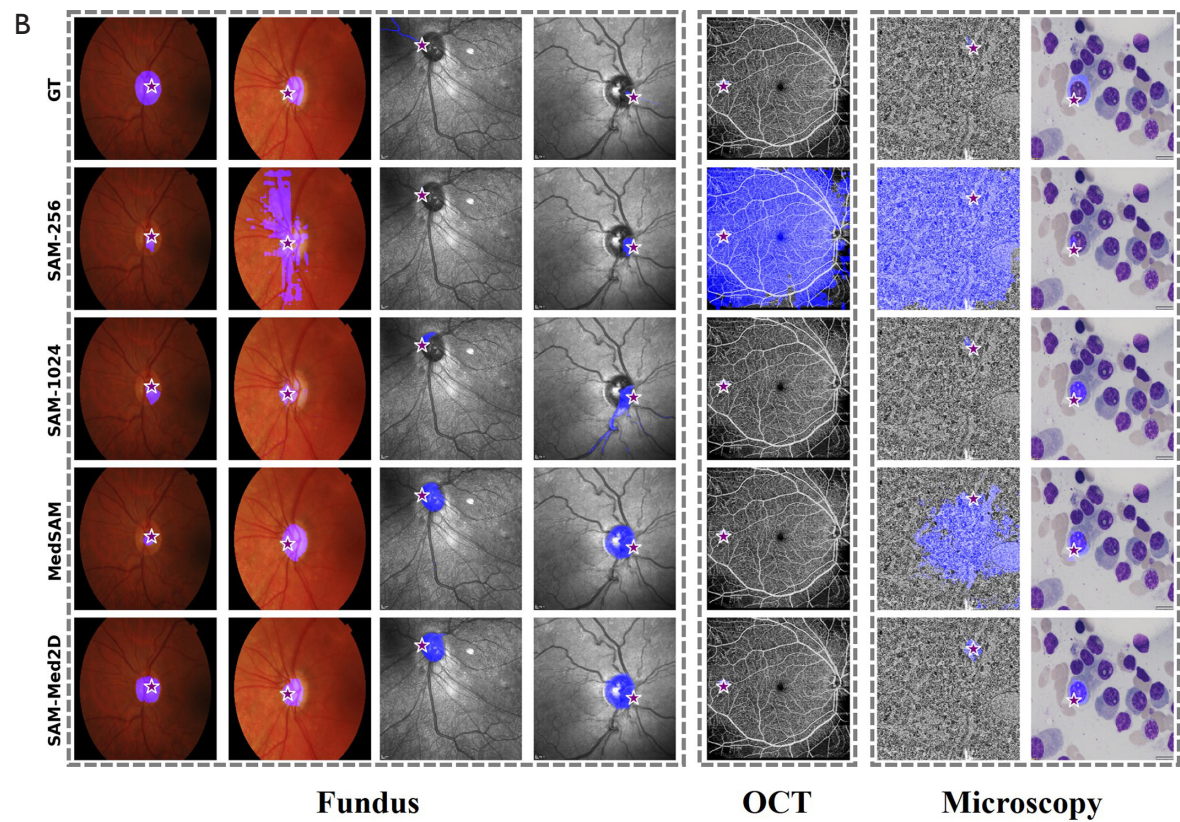
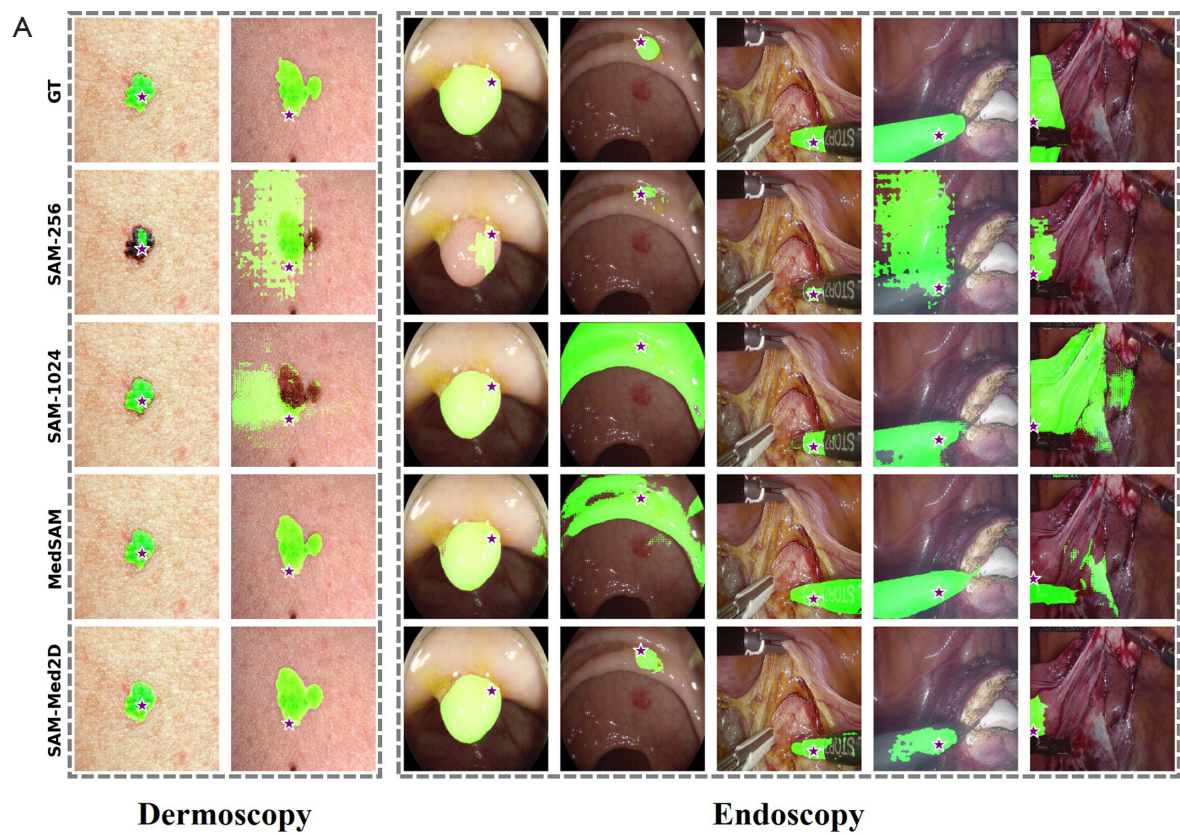
Table S1 Detailed class list used as text prompts for segmentation tasks across various imaging modalities

Modality	Segmentation target
US	Breast tumor
MRI	White matter multiple sclerosis
MRI	Pituitary adenoma
CT	Inner ear
CT	Liver
CT	Abdominal aorta
CT	Portal vein with branches
CT	Liver tumor
CT	Adrenal carcinoma
CT	Zone 6
CT	Celiac artery
CT	Zone 7
CT	Superior mesenteric artery
CT	Zone 8
CT	Right renal artery
CT	Left renal artery
CT	Zone 9
CT	Right common iliac artery
CT	Left common iliac artery
CT	Right internal iliac artery
CT	Left internal iliac artery
CT	Right external iliac artery
CT	Left external iliac artery
CT	True lumen
CT	False lumen
CT	False lumen thrombosis
CT	Coronary artery

US, ultrasound; MRI, magnetic resonance imaging; CT, computed tomography.

Table S2 Data availability

Dataset	Source
UWater Skin Cancer	https://uwaterloo.ca/vision-image-processing-lab/research-demos/skin-cancer-detection
ETIS-LaribPolypDB	https://www.kaggle.com/datasets/nguyenvoquocduong/etis-laribpolypdb
AutoLaparo	https://autolaparo.github.io/
DRAC2022	https://drac22.grand-challenge.org/Description/
SegPC2021	https://segpc-2021.grand-challenge.org/Dataset/
MitoEM	https://mitoem.grand-challenge.org/
PAPILA	https://figshare.com/articles/dataset/PAPILA/14798004/1
RAVIR	https://ravir.grand-challenge.org/
PathologyImagesForGlandSeg	https://ieee-dataport.org/documents/pathological-images-gland-segmentation
GlaS@MICCAI2015	https://github.com/twpkevin06222/Gland-Segmentation
MoNuSAC2020	https://monusac-2020.grand-challenge.org/Home/
WSSS4LUAD	https://wsss4luad.grand-challenge.org/
COVID-19 Radiography	https://www.kaggle.com/datasets/tawsifurrahman/covid19-radiography-database
ARCADE	https://arcade.grand-challenge.org/
RBIS-DDSM	https://ieee-dataport.org/documents/re-curated-breast-imaging-subset-ddsm-dataset-rbis-ddsm
Xray_hip	https://data.mendeley.com/datasets/zm6bxzhmfz/1
QAMEBI	https://qamebi.com/breast-ultrasound-images-database/
BUSC	https://data.mendeley.com/datasets/vckdnhtw26/1
USFetalHead	https://data.mendeley.com/datasets/4gcpm9dsc3/1
TDSC-ABUS2023	https://tdsc-abus2023.grand-challenge.org/
RESECT-SEG	https://curious2022.grand-challenge.org/data/
ATLAS2023	https://atlas-challenge.u-bourgogne.fr/
CrossMoDA2022	https://crossmoda2022.grand-challenge.org/dataset/
PASeg	https://ieee-dataport.org/documents/pituitary-adenoma-mri-segmentation-dataset
Shifts2022	https://shifts.grand-challenge.org/
ASOCA	https://asoca.grand-challenge.org/
Adrenal-ACC-Ki67-Seg	https://wiki.cancerimagingarchive.net/pages/viewpage.action?pagelId=9325794593257945d20474acc83148a18de7f16d11c52341
HCC-TACE-Seg	https://wiki.cancerimagingarchive.net/pages/viewpage.action?pagelId=70230229
ImageTBAD	https://www.kaggle.com/datasets/xiaoweixumedicalai/imagetbad
InnerEarSeg	https://ieee-dataport.org/documents/ct-training-and-validation-series-3d-automated-segmentation-inner-ear-using-u-net
SegRap2023_Task2	https://segrap2023.grand-challenge.org/



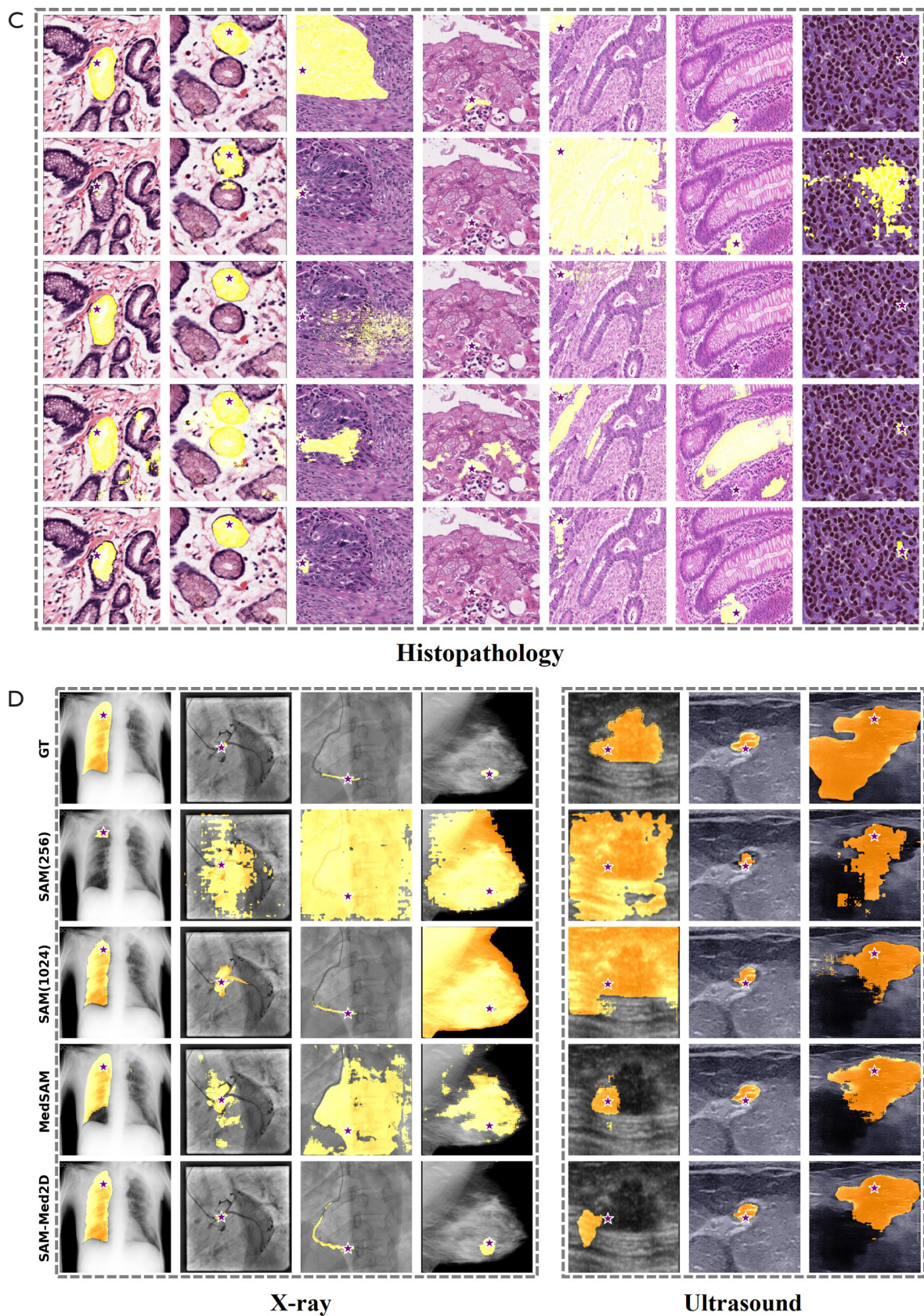


Figure S1 Additional visualizations. We illustrate different prediction results not included in the main paper. These visualizations provide further insights into the model's performance, complementing the main analysis and offer a more detailed understanding of its strengths and limitations. The star indicates the positive point prompt used for interactive segmentation. (A) Segmentation results for dermoscopy and endoscopy images. (B) Segmentation results for fundus, OCT, and microscopy images. (C) Segmentation results for histopathology. (D) Segmentation results for X-ray and ultrasound images. All medical images were obtained from the publicly available datasets: dermoscopy - UWater Skin Cancer (129); endoscopy - ETIS-LaribPolypDB (130) and AutoLaparo (131); OCT - DRAC2022 (132); Microscopy - SegPC2021 (133) and MitoEM (134); Fundus - PAPILA (135) and RAVIR (136); Histopathology - PathologyImagesForGlandSeg (137), GlaS@MICCAI2015 (138), MoNuSAC2020 (139), and WSSS4LUAD (140); X-ray - COVID-19 Radiography (144,145), ARCADE (146), and RBIS-DDSM (147); ultrasound - QAMEBI (146,147) and BUSC (148). Histopathology dataset specifications: PathologyImagesForGlandSeg (20× magnification, 0.62 $\mu\text{m}/\text{pixel}$ resolution); GlaS@MICCAI2015 (20× magnification, 0.62 $\mu\text{m}/\text{pixel}$ resolution); MoNuSAC2020 (40× magnification); WSSS4LUAD (40× magnification, 0.2517 $\mu\text{m}/\text{pixel}$ resolution).

Table S3 Dataset scale used for training in each study

Method	Dataset scale
MedFormer	7 public datasets
MedCLIP-SAM	3 public datasets
Med-SA	5 public datasets
SkinSAM	10K dermoscopic images
STU-Net	1.2K CT images
UniverSeg	53 public datasets, with over 22K scans
Polyp-SAM	5 public datasets with 2.2K endoscopy images
SAMed	3.8K abdominal CT images
MedSAM	1.57M image-mask pairs
SAM-LST	30 abdominal CT scans
3DSAM-Adapter	4 public datasets
MIS-FM	110K unannotated CT scans
AutoSAM	7 public datasets
SAM-Path	2 public pathology datasets, with 364 images
Shi <i>et al.</i>	489 multimodality MRI images
tUbe net	-
SurgicalSAM	2 endoscopy datasets
Polyp-SAM++	4 benchmark colonoscopy datasets
AdaptiveSAM	3 public surgical scene segmentation datasets
SAM-Med2D	4.6M images and 19.7M masks from public and private datasets
SAM3D	4 public datasets
SAM-OCTA	OCTA-500 dataset with 500 samples
Anand <i>et al.</i>	877 slices
MediViSTA-SAM	CAMUS dataset with 1K patients
MA-SAM	10 public datasets
SonoSAMTrack	≈ 200k ultrasound image-mask pairs
WSI-SAM	350 WSIs with 12,424 masks
Pandey <i>et al.</i>	-
SAMPOT	122 subjects
SonoSAM	200K ultrasound image-mask pairs
SAM-Med3D	22K 3D images
Eviprompt	6 public datasets

Table S3 (*continued*)**Table S3** (*continued*)

Method	Dataset scale
MedLSAM	14K CT scans from 16 different datasets
CellSAM	9 datasets
SegVol	90K unlabeled CT volumes and 6K labeled CT volumes
GMISeg	5 public datasets
SAM-CLNet	900 colonoscopy images
SP-SAM	2 endoscopy datasets
SAT	22K 3D image scans
AFTer-SAM	2 3D CT datasets
PUNETR	3 3D public datasets
SegmentAnyBone	300 annotated volumes and 8.5K annotated slices
UN-SAM	4 nuclei segmentation datasets
APPLE	2 public datasets
FluoroSAM	1.6M synthetic X-ray images
ProMISe	2 public datasets
SAIM	100 patient private ultrasound dataset
Zhou <i>et al.</i>	-
One-Prompt Segmentation	64 public datasets, with 3K clinician-labeled prompts
Indelman <i>et al.</i>	-
MAFUnet	7 brain MR public datasets
GSAM+ Cutie	2 public endoscopy datasets
Hermes	11 diverse datasets, with 2.4K 3D images
WSPolyp-SAM	5 public endoscopy datasets
MoME	6 public datasets, with 6.6K 3D images
ESP-MedSAM	6 public datasets
DrSAM	-
CC-SAM	7 public datasets
SAMUS	30K ultrasound images
DeSAM	2 public datasets
SAM-UNet	SA-Med2D 16M dataset
BrainSegFounder	43.3K patients, with 88.5K images
SimSAM	3 public datasets

‘-’ indicates that information about the dataset scale was not explicitly provided in the original publication.