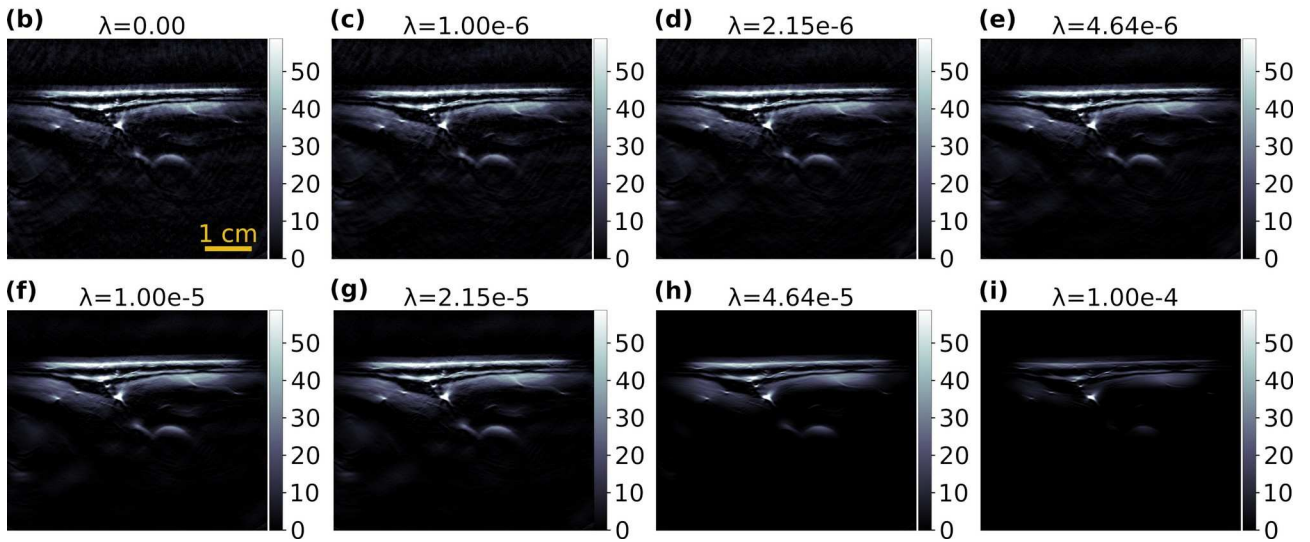
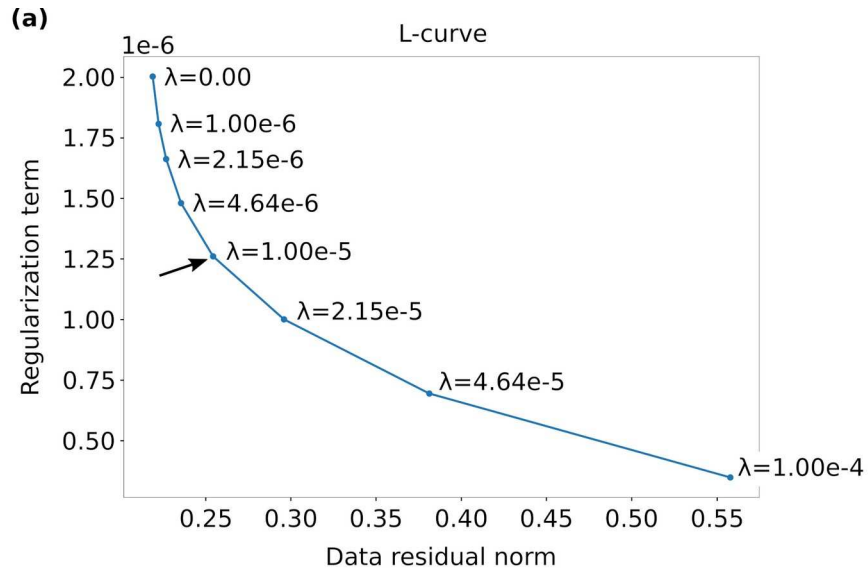


Supplementary Figure 1. Further examples of optoacoustic images from scale-equivariant and standard model-based reconstruction for in vivo sinograms with high (a, b), low (c, d), and median (e, f)  $L^2$  norms.



Supplementary Figure 2. Example L-curve analysis used to tune the regularization value  $\lambda$ . (a) L-curve showing the regularization terms in function of the data residual norm, for eight different  $\lambda$  values. The arrow indicates the point located at the elbow of the curve, obtained with the regularization value  $\lambda=1.00e-5$ . (b-i) Reconstructed images with all eight tentative  $\lambda$  values. (f) Image reconstructed with regularization value  $\lambda=1.00e-5$ , showing an optimal trade-off between data fidelity (image contrast) and regularization (absence of noise).