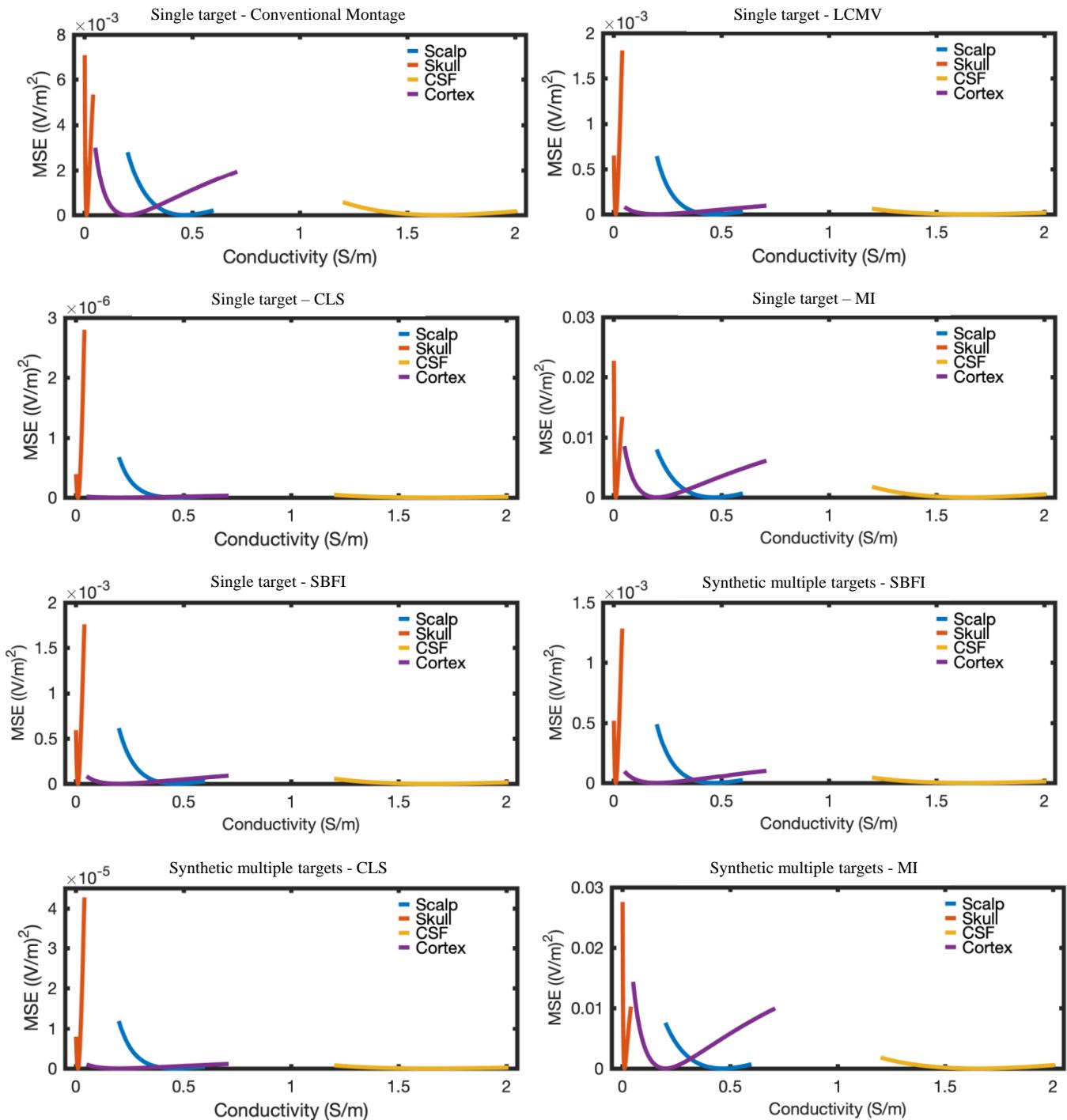
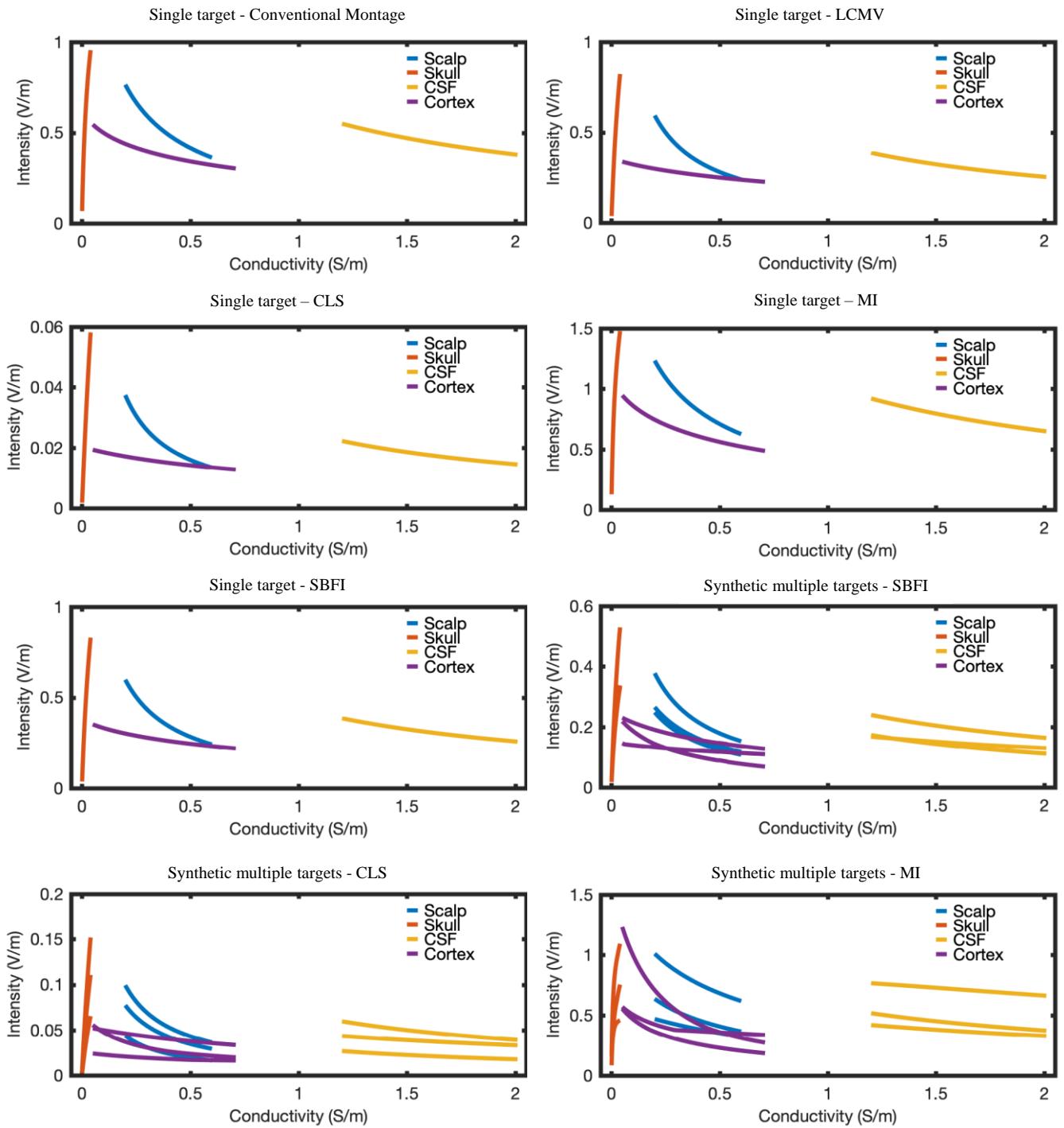


Robustness test results - MSE



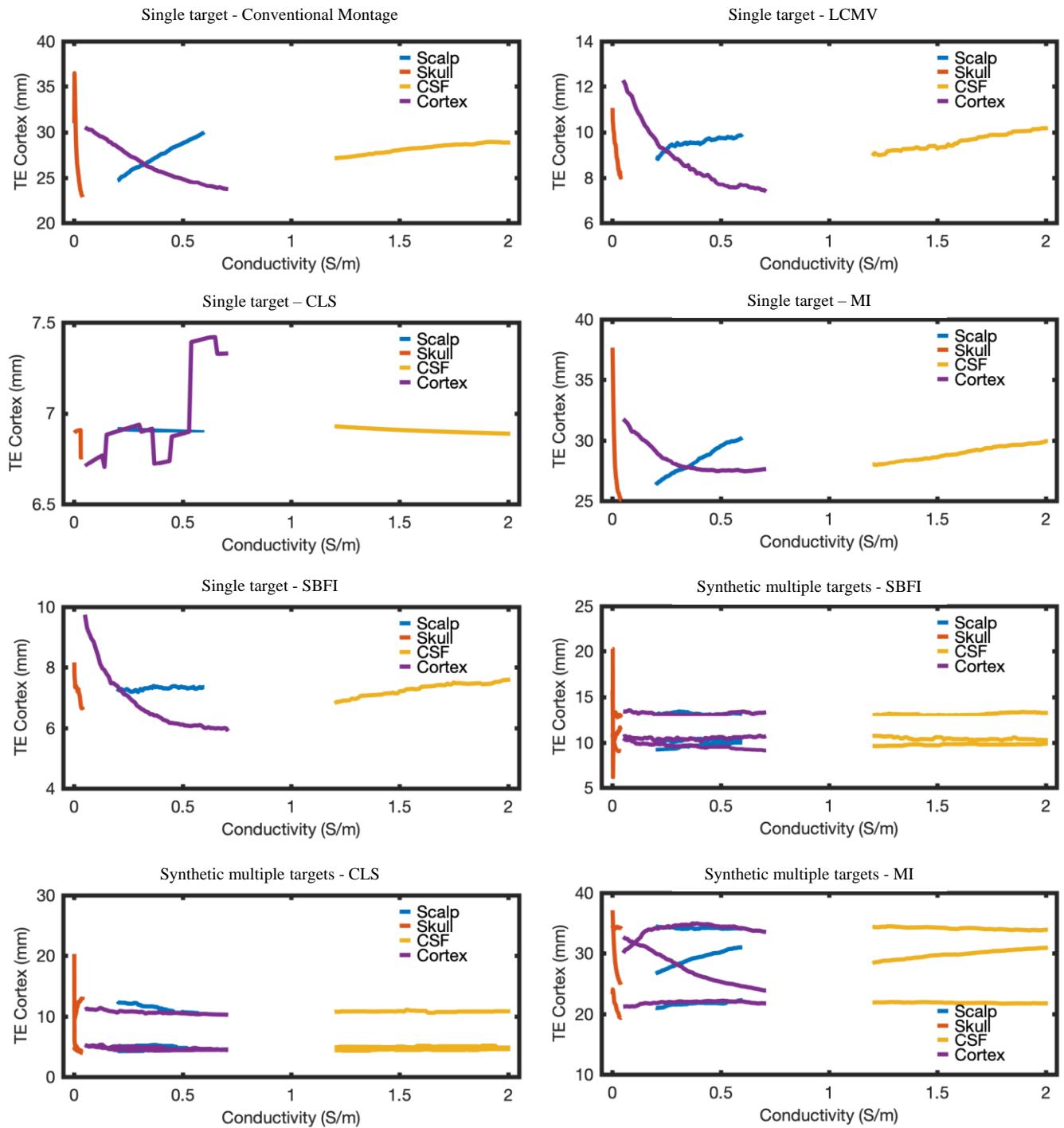
Supplementary Figure S1. Mean Square Error (MSE) between expected electric field $e_{3n \times 1}$ and electric field $e'_{3n \times 1}$ due to the conductivity uncertainty with different optimization algorithm and different target types.

Robustness test results - Intensity



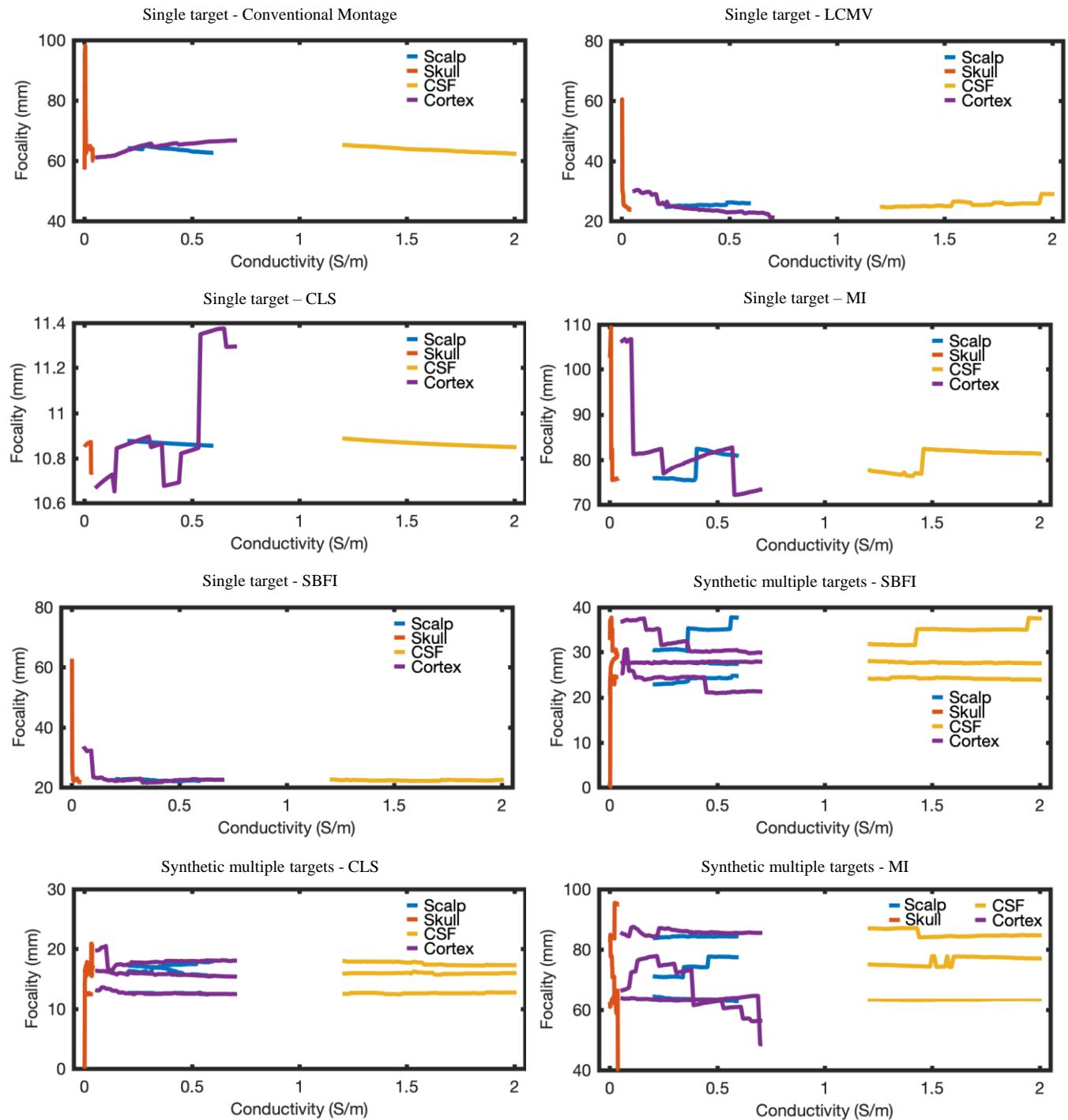
Supplementary Figure S2. Intensity changes due to conductivity uncertainty with different optimization algorithm and different target types.

Robustness test results - TE



Supplementary Figure S3. TE changes due to conductivity uncertainty with different optimization algorithm and different target types.

Robustness test results - Focality



Supplementary Figure S4. Focality changes due to conductivity uncertainty with different optimization algorithm and different target types.

Supplementary Table S1. Synthetic multiple targets dissimilarity results of the robustness test

Multiple Targets				
Tissue	σ	SBFI	MI	CLS
Scalp	0.2-0.6	4.67×10^{-4}	0.0084	5.01×10^{-6}
		4.99×10^{-4}	0.0040	1.65×10^{-5}
		5.31×10^{-4}	0.0118	2.24×10^{-5}
Skull	0.001-0.04	0.0012	0.0269	1.82×10^{-5}
		0.0016	0.0210	6.30×10^{-5}
		0.0010	0.0409	7.30×10^{-5}
CSF	1.20-2.01	5.29×10^{-5}	0.0019	4.12×10^{-7}
		3.84×10^{-5}	0.0015	1.12×10^{-6}
		3.18×10^{-5}	0.0020	1.11×10^{-6}
Cortex	0.05-0.71	9.74×10^{-5}	0.0159	3.71×10^{-7}
		7.13×10^{-5}	0.0077	1.01×10^{-6}
		1.65×10^{-4}	0.0219	3.72×10^{-6}

Supplementary Table S2. Synthetic multiple targets intensity results of the robustness test

Multiple Targets				
Tissue	σ	Max Intensity	Min Intensity	Rate
Scalp	0.2-0.6	0.2487	0.1077	0.3526
		0.3775	0.1530	0.5611
		0.2658	0.1170	0.3719
Skull	0.001-0.04	0.3319	0.0176	8.0589
		0.5299	0.0238	12.975
		0.3373	0.0193	8.1548
CSF	1.20-2.01	0.1735	0.1116	0.0764
		0.2399	0.1639	0.0938
		0.1683	0.1299	0.0473
Cortex	0.05-0.71	0.1464	0.1096	0.0558
		0.2306	0.1275	0.1561
		0.2190	0.0684	0.2281

Supplementary Table S3. Synthetic multiple targets TE results of the robustness test

Multiple Targets				
Tissue	σ	Max TE	Min TE	Rate
Scalp	0.2-0.6	13.419	13.013	1.0129
		9.9963	9.1801	2.0406
		10.445	9.9791	1.1639
Skull	0.001-0.04	15.727	12.758	76.13
		10.948	8.9889	50.229
		20.276	6.1442	362.35
CSF	1.20-2.01	13.35	12.957	0.4853
		9.8767	9.6118	0.3270
		10.744	10.232	0.6327
Cortex	0.05-0.71	13.544	12.901	0.9750
		10.478	9.0941	2.0975
		10.77	10.129	0.9715

Supplementary Table S4. Synthetic multiple targets focality results of the robustness test

Multiple Targets				
Tissue	σ	Max Focality	Min Focality	Rate
Scalp	0.2-0.6	37.785	30.202	18.958
		24.751	24.751	24.751
		27.838	27.346	1.2317
Skull	0.001-0.04	37.744	29.499	211.4
		25.005	20.542	114.45
		29.092	0	745.95
CSF	1.20-2.01	37.678	31.484	7.6467
		24.442	23.869	0.7081
		27.987	27.473	0.6349
Cortex	0.05-0.71	37.52	29.707	11.838
		30.605	20.917	14.679
		27.912	27.485	0.64668