

Table S1 Breast MRI scanning parameters for each center and sequence

Center	Scanner	Sequence	TR (ms)	TE (ms)	FOV (mm ²)	Matrix (px ²)	Slice thickness (mm)	Section Gap (mm)	No. of Sections	Flip Angle	Acquisition time (sec)	b values/mm ²
1	1.5-T MRI (uMR 560, United Imaging)	DCE	5.1	2.1	320×320	400×400	1.2	1.2	120	10°	394	
		T2WI	3800	42.7	320×320	272×272	4	1	27	150°	126	
		DWI	3800	78.4	350×200	320×182	4	1	54	90°	103	0, 800
2	3.0-T MRI (Ingenia, Philips)	DCE	4.5	2.3	340×340	512×512	2	1.5	107	12°	426	
		T2WI	5000	65	340×340	560×560	5	1.5	28	111°	210	
		DWI	7354	79	340×340	288×288	5	1.5	56	90°	110	0, 800
3	3.0-T MRI (Discovery MR 750W, GE)	DCE	4.4	2.1	360×360	512×512	1.5	1.5	116	12°	497	
		T2WI	5230	85	380×380	512×512	5	1	28	111°	165	
		DWI	6478	64	380×380	256×256	5	1	56	90°	117	0, 800

TR, repetition time; TE, echo time; FOV, field of view; T2WI, T2-weighted imaging; DWI, diffusion-weighted imaging; DCE, dynamic contrast-enhanced.

Table S2 Interobserver agreement for the variables

Variable	Interobserver agreement	
	Pre-NAC	After two cycles of NAC
Size		
Size (C1)	0.867 (0.695–0.945)	0.921 (0.812–0.968)
Size (C2)	0.850 (0.660–0.938)	0.921 (0.812–0.968)
Size (C5)	0.832 (0.624–0.930)	0.919 (0.807–0.967)
SER		
SER (C1)	0.778 (0.520–0.906)	0.854 (0.668–0.940)
SER (C2)	0.818 (0.597–0.924)	0.870 (0.701–0.946)
SER (C5)	0.800 (0.562–0.916)	0.863 (0.686–0.943)
ADC	0.835 (0.630–0.931)	0.809 (0.578–0.920)

SER, lesion-to-background parenchymal signal enhancement ratio; ADC, apparent diffusion coefficient.

Table S3 The comparison of variables across different magnetic resonance field strengths

Variable	Primary cohort (1.5T)	External validation cohort 1 (3T)	External validation cohort 2 (3T)	P ^a	P ^b
Δ%SER (C1)	-0.228 (-0.528, 0.005)	-0.201 (-0.369, -0.012)	-0.182 (-0.421, 0.001)	0.231	0.213
Δ%SER (C2)	-0.150 (-0.418, 0.073)	-0.170 (-0.335, -0.007)	-0.134 (-0.305, 0.003)	0.794	0.775
Δ%SER (C5)	-0.088 (-0.293, 0.109)	-0.087 (-0.285, 0.109)	-0.117 (-0.247, 0.082)	0.915	0.871
Δ%ADC	0.208 (0.050, 0.418)	0.244 (0.089, 0.485)	0.356 (0.165, 0.596)	0.274	0.001

SER, lesion-to-background parenchymal signal enhancement ratio; ADC, apparent diffusion coefficient. P^a Comparison between primary cohort and external validation cohort 1 via the Mann-Whitney U test; P^b Comparison between primary cohort and external validation cohort 2 via the Mann-Whitney U test.

Table S4 Detailed diagnostic performance metrics of each abbreviated MRI protocol for the prediction of pCR

Cohort	Protocol	ACC	SEN	SPE	PPV	NPV
Primary cohort	Protocol 1	0.811	0.686	0.864	0.686	0.864
	Protocol 2	0.811	0.647	0.881	0.702	0.852
	Protocol 3	0.757	0.686	0.788	0.583	0.853
	Protocol 4	0.840	0.745	0.881	0.731	0.889
	Protocol 5	0.799	0.824	0.788	0.627	0.912
	Protocol 6	0.787	0.824	0.771	0.609	0.910
External validation cohort 1	Protocol 1	0.742	0.700	0.763	0.600	0.833
	Protocol 2	0.775	0.700	0.814	0.656	0.842
	Protocol 3	0.663	0.767	0.610	0.500	0.837
	Protocol 4	0.820	0.733	0.864	0.733	0.864
	Protocol 5	0.742	0.833	0.695	0.581	0.891
	Protocol 6	0.730	0.900	0.644	0.562	0.927
External validation cohort 2	Protocol 1	0.683	0.500	0.785	0.562	0.739
	Protocol 2	0.762	0.636	0.815	0.667	0.815
	Protocol 3	0.604	0.778	0.508	0.467	0.805
	Protocol 4	0.792	0.806	0.785	0.674	0.879
	Protocol 5	0.683	0.944	0.538	0.531	0.946
	Protocol 6	0.653	0.917	0.508	0.508	0.917

MRI, magnetic resonance imaging; pCR, pathologic complete response; ACC, accuracy; SEN, sensitivity; SPE, specificity; PPV, positive predictive value; NPV, negative predictive value.