

Image size	256×256	
Voxel size	1.0mm×1.0mm×5.0 mm	
TR	100 ms	
TE	3 ~ 69 ms (6ms increment)	
Flip angle	20°	90°
Number of echo	12	12
Effective scan time	26 s	26 s

(a) Multi-echo GRE parameters

Image size	256×256			
Voxel size	1.0mm×1.0mm×5.0 mm			
TR	6 ms			
TE	3 ms			
Flip angle	10°			
N (Number of echo = N)	5	6	7	12
Middle F-state	F2	F2	F3	F5
Gradient spoiler shift	40 lines	40 lines	34 lines	20 lines
Effective scan time (Exclude dummy scan)	8 s	9 s	11 s	18 s

(b) ka-SPGR parameters