To be performed for all MRI scans

PROTOCOL FOR MRI OF THE BRAIN Siemens 1.5T SymphonyTim, Espree, Essenza, Avanto, Amira, Aera, Sempra and Sola						
Sequence #		1	2	3	4	5
Sequence name		3DT1	FLAIR	MT	PDT2	T1 Gd
Sequence variant		*tfl3d1_ns	*tir2d1_16	*fl3d1	*tse2d2rs6	*se2d1r
Routine	Orientation	Sagittal	Axial	Axial	Axial	Axial
	Phase enc. direction	A >> P	R >> L	R >> L	R >> L	R >> L
	Phase oversampling (%)	0	0	0	0	0
	Slice oversampling (%)	0				
	Slices per group/slab	176	46	60	46	46
	FOV read (mm)	240	240	240	240	240
	FOV phase (%)	100	75	75	75	75
	Slice thickness (mm)	1.2	3	3	3	3
	Distance factor (%)		0	0	0	0
	TR (ms)	2400	10000	30	2000-3000	400-700
	TE (ms)	~3.6	120	11	~30, ~90	Minimum
	Averages	1	1	1	1	2
	Concatenations		2-3	1	1-3	2-3
Contrast	Measurements	1	1	1	1	1
	Magn. preparation	Non-Sel IR	Slice-sel. IR	None	None	None
	TI (ms)	1000	2500			
	Flip Angle	8		15		
	Fat suppr.	None	None	None	Fat Sat. - Strong	None
Resolution	Base resolution	192	256	256	256	256
	Phase resolution (%)	100	100	100	100	100
	Slice resolution (%)	100		100		
	Phase partial Fourier	Off	Off	Off	Off	Off
	Slice partial Fourier	Off		Off		
	Filter	Prescan Normalize Distortion Corr. 3D	Prescan Normalize Distortion Corr. 2D	Prescan Normalize Distortion Corr. 2D	Prescan Normalize Distortion Corr. 2D	Prescan Normalize Distortion Corr. 2D
	Interpolation	Off	Off	Off	Off	Off
	iPAT	2	Allowed up to 2	Allowed up to 2	Allowed up to 2	Allowed up to 2
Sequence	Contrasts		1	1	2	1
	Bandwidth (Hz/Px)	180	130	70	130	130
	Flow comp.	No	No	No	Slice	Yes
	Asymmetric echo	Off		Off		
	Turbo factor		16		6	
	Gradient mode	Fast	Fast	Fast	Fast	Fast
	Excitation	Non-sel.		Slab-sel.		
	RF spoiling	On		On		
Additional instructions			Freeze suppressed tissue = Off Water suppr. = None	Run once with MTC = Off And then run again with MTC = On See note below		
Approximate scan time [min:sec]		~4:20	4:00 – 6:00	3:00 – 5:00 ×2	3:00 – 5:00	6:00 – 8:00

Note for MT set-up: You are required to run the MT scan twice – once with no MTC pulse selected and once with MTC pulse selected.

1) First set up the MT-on sequence using the appropriate parameters for your system (with possible adjustments to the TR to accommodate the MT pulse). MT pulse can be activated by a checkbox in the Contrast card (MTC).

2) Copy and paste the sequence as a new series and remove the MT pulse from the pasted/renamed series. This ensures that the two sequences are identical except for the presence/absence of the MT pulse.

3) Move the MT-off sequence up in the scanning order so that the gain is set by the MT-off (which produces more signal in the coil) to avoid potential truncation artifacts.

To be performed for all MRI scans, if available on the MRI scanner

PROTOCOL FOR MRI OF THE BRAIN	
Siemens 1.5T SymphonyTim, Espree, Essenza, Avanto, Amira, Aera, Sempra and Sola	
Sequence #	**6**
Sequence name	**DTI**
Sequence variant	*ep_0, *ep_b1000t
Routine — Orientation	Axial
Routine — Phase enc. direction	A >> P
Routine — Phase oversampling (%)	0
Routine — Slice oversampling (%)	
Routine — Slices per group/slab	80
Routine — FOV read (mm)	232
Routine — FOV phase (%)	100
Routine — Slice thickness (mm)	2
Routine — Distance factor (%)	0
Routine — TR (ms)	Minimum
Routine — TE (ms)	Minimum
Routine — Averages	1
Routine — Concatenations	1
Contrast — Measurements	1
Contrast — Magn. preparation	None
Contrast — TI (ms)	
Contrast — Flip Angle	
Contrast — Fat suppr.	Fat Sat. - Strong
Resolution — Base resolution	116
Resolution — Phase resolution (%)	100
Resolution — Slice resolution (%)	
Resolution — Phase partial Fourier	7/8
Resolution — Slice partial Fourier	
Resolution — Filter	
Resolution — Interpolation	Off
Resolution — iPAT	1
Sequence — Contrasts	
Sequence — Bandwidth (Hz/Px)	~ 1500
Sequence — Flow comp.	
Sequence — Asymmetric echo	
Sequence — Turbo factor	
Sequence — Gradient mode	Fast
Sequence — Excitation	
Sequence — RF spoiling	
Additional instructions	Diffusion mode = MDDW Diff. Directions = 30 Diffusion scheme = Monopolar Diff. Weightings = 2 b-values = 0, 1000 b-averages = 1 (0), 1 (1000) Diff. weighted images, ADC, Trace, FA, Mosaic, Tensor
Approximate scan time [min:sec]	6:00 – 8:00

Questions? Please contact: M18-918@bioclinica.com

BIOCLINICA®

Quick Reference Guide for the Acquisition of MRI Scans

To be performed for all MRI scans

PROTOCOL FOR MRI OF THE CERVICAL SPINE			
Siemens 1.5T SymphonyTim, Espree, Essenza, Avanto, Amira, Aera, Sempra and Sola			
Sequence #	7	8	9
Sequence name	Spine T1	Spine STIR	Spine T2*
Sequence variant	*se2d1_3	*tir2d1rr15	*me2d1r4

Routine		Sequence 7	Sequence 8	Sequence 9
Routine	Orientation	Sagittal	Sagittal	Axial
	Phase enc. direction	H >> F	H >> F	A >> P
	Phase oversampling [%]	100	100	0
	Slice oversampling [%]			0
	Slices per group/slab	13	13	30
	FOV read [mm]	240	240	200
	FOV phase [%]	100	100	100
	Slice thickness [mm]	3	3	4
	Distance factor [%]	10	10	10
	TR [ms]	400-600	~4000	300-500
	TE [ms]	Minimum	~40	~14
	Averages	1	2	1
	Concatenations	1	1	2
Contrast	Measurements	1	1	1
	Magn. preparation	None	Slice-sel. IR	None
	TI [ms]		160	
	Flip Angle	150	150	30
	Fat suppr.	None	None	None
Resolution	Base resolution	256	256	256
	Phase resolution [%]	75	75	100
	Slice resolution [%]			
	Phase partial Fourier	Off	Off	Off
	Slice partial Fourier			
	Filter	Prescan Normalize Distortion Corr. 2D	Prescan Normalize Distortion Corr. 2D	Prescan Normalize Distortion Corr. 2D
	Interpolation	Off	Off	Off
	iPAT	Off	Allowed up to 2	Allowed up to 2
Sequence	Contrasts	1	1	1
	Bandwidth [Hz/Px]	130	130	130
	Flow comp.	No	Read	Yes
	Asymmetric echo		Off	
	Turbo factor	3	15	
	Gradient mode	Fast	Normal	Normal
	Excitation			
	RF spoiling			On
Additional instructions				Combined echoes = 4
Approximate scan time [min:sec]		1:30 – 3:00	3:00 – 5:00	2:00 – 4:00

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