\\USER\Feinberglab\Suhyung\GRASE VASO w/ CS\BP_grase_IV_Regular_VASO_SH TA: 10:00 PAT: Off Voxel size: 0.8×0.8×1.5 mm Rel. SNR: 1.00 USER: BP_grase_IV_CS_VASO_SH

Properties		Position Orientation	Isocenter Coronal
Prio Recon	Off	Special sat.	None
Before measurement			
After measurement	0.5	Table position	H
Load to viewer	On Off	Table position	0 mm Off
Inline movie	On	Inline Composing	Oli
Auto store images Load to stamp segments	Off	System	
Load images to graphic	Off	T1	On
segments	Oli	M2	On
Auto open inline display	Off	B4	On
Start measurement without	On	M3	On
further preparation	.	V32	Off
Wait for user to start	Off	Positioning mode	REF
Start measurements	single	MSMA	S - C - T
Douting	3	Sagittal	R >> L
Routine		- Coronal	A >> P
Slab group 1	4	Transversal	F >> H
Slabs Dist. factor	1 0 %	Save uncombined	Off
Position	Isocenter	Coil Combine Mode	Adaptive Combine
Orientation	Transversal	AutoAlign	
Phase enc. dir.	A >> P	Auto Coil Select	Default
Rotation	0.00 deg	Chim made	Ctondord
Phase oversampling	0.00 deg 0 %	Shim mode Adjust with body coil	Standard Off
Slice oversampling	0.0 %	Confirm freq. adjustment	Off
Slices per slab	8	Assume Silicone	Off
FoV read	84.0 mm	! Ref. amplitude 1H	220.000 V
FoV phase	25.0 %	Adjustment Tolerance	Auto
Slice thickness	1.50 mm	Adjust volume	Adio
TR	3000 ms	Position	Isocenter
TE	37.7 ms	Orientation	Transversal
Averages	1	Rotation	0.00 deg
Concatenations	1	R >> L	84 mm
Filter	None	A >> P	21 mm
Coil elements	B4;M2,3;T1	F >> H	12 mm
Contract			
Contrast	Non-sel. IR	Physio	
Magn. preparation	1100 ms	1st Signal/Mode	None
	160 deg	Composing	
Flip angle	Fat sat.	0	
Fat suppr. Fat sat. mode	Strong	Sequence	0"
	onong	Introduction	Off
Averaging mode	Long term	Dimension	3D Contrib
Reconstruction	Magnitude	Reordering Contrasts	Centric 2
Measurements	200	Bandwidth	2 1144 Hz/Px
Pause after meas.	0.0 s	Echo spacing	1 ms
Multiple series	Off		1 1113
Resolution		Turbo factor	5
Base resolution	112	EPI factor	28
Phase resolution	100 %	RF pulse type	Normal
Slice resolution	100 %	Gradient mode	Fast
Slice partial Fourier	5/8	refocussing type	sinc 2560
Interpolation	Off	BIR4: 2nd segm phase	338
PAT mode	None	BIR4: duration	5120
FATINOUE	None	excite duration	2560
Prescan Normalize	Off	refoc duration	2560
Raw filter	Off	excite BWTP	12.0
Geometry		refoc BWTP	8.0
Geometry	Interlooved	- actual ETL	5
Series	Interleaved	phase encoding	ON
Sat. region 1		Maxwell compensation	Off
Thickness	20 mm	ICE program	single
1			

Time Delay [us]	1280
Regular or CS	Regular
Variable Flip Angle 01	180
Variable Flip Angle 02	180
Variable Flip Angle 03	180
Variable Flip Angle 04	180
Variable Flip Angle 05	180
Variable Flip Angle 06	180
Variable Flip Angle 07	180
Variable Flip Angle 08	180
Variable Flip Angle 09	180
Variable Flip Angle 10	180
Variable Flip Angle 11	180
Variable Flip Angle 12	180
Variable Flip Angle 13	180
Variable Flip Angle 14	180
Crusher Gr	40000

TA: 10:00 PAT: Off Voxel size: 0.8×0.8×1.5 mm Rel. SNR: 1.00 USER: BP_GRASE_VASO_SH

Droportion		Orientation	Coronal
Properties Properties	O#	— Special sat.	None
Prio Recon Before measurement	Off	Table position	 Н
After measurement		Table position	0 mm
Load to viewer	On	Inline Composing	Off
Inline movie	Off		Oll
Auto store images	On	System	
Load to stamp segments	Off	T1	On
Load images to graphic	Off	M2	On
segments		B4	On
Auto open inline display	Off	M3	On
Start measurement without	On	V32	Off
further preparation		Positioning mode	REF
Wait for user to start	Off	MSMA	S - C - T
Start measurements	single	Sagittal	R >> L
Routine		Coronal	A >> P
		— Transversal	F >> H
Slab group 1 Slabs	1	Save uncombined	Off
Dist. factor	0 %	Coil Combine Mode	Adaptive Combine
Position	Isocenter	AutoAlign	
Orientation	Transversal	Auto Coil Select	Default
Phase enc. dir.	A >> P	Shim mode	Standard
Rotation	0.00 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freq. adjustment	Off
Slice oversampling	0.0 %	Assume Silicone	Off
Slices per slab	36	! Ref. amplitude 1H	220.000 V
FoV read	84.0 mm	Adjustment Tolerance	Auto
FoV phase	25.0 %	Adjust volume	Adio
Slice thickness	1.50 mm	Position	Isocenter
TR	1500 ms	Orientation	Transversal
TE	24.02 ms	Rotation	0.00 deg
Averages	1	R >> L	84 mm
Concatenations	1	A >> P	21 mm
Filter	None	F >> H	54 mm
Coil elements	B4;M2,3;T1	Dhuaia	
Contrast		Physio 1st Signal/Mode	None
Magn. preparation	None	<u> </u>	None
Flip angle	180 deg	Composing	
Fat suppr.	Fat sat.	Sequence	
Fat sat, mode	Strong	Introduction	Off
		Dimension	3D
Averaging mode	Long term	Reordering	Centric
Reconstruction	Magnitude	Contrasts	1
Measurements	400	Bandwidth	1144 Hz/Px
Pause after meas.	0.0 s	Echo spacing	1.2 ms
Multiple series	Off		
Resolution		Turbo factor	36
Base resolution	112	EPI factor	12
Phase resolution	100 %	RF pulse type	Normal
Slice resolution	100 %	Gradient mode	Fast
Slice partial Fourier	Off	refocussing type	variable sinc
Interpolation	Off	flip angle excit	90
PAT mode	None	phase encoding	ON
		Maxwell compensation	Off
Prescan Normalize	Off	ICE program	single
Raw filter	Off	excite duration	2560
Geometry		refoc duration	3840
Series	Interleaved	excite BWTP	12.0
		refoc BWTP	8.0
Sat. region 1		Variable Flip Angle 01	180
Thickness	22 mm	Variable Flip Angle 02	180
Position	Isocenter	Variable Flip Angle 03	180
		2/10	

Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 07 Variable Flip Angle 08 Variable Flip Angle 09 Variable Flip Angle 10 Variable Flip Angle 11 Variable Flip Angle 12 Variable Flip Angle 13 Variable Flip Angle 13 Variable Flip Angle 15 Variable Flip Angle 15 Variable Flip Angle 16 Variable Flip Angle 17 Variable Flip Angle 17 Variable Flip Angle 18 Variable Flip Angle 19 Variable Flip Angle 20 Regular or CS actual ETL Which areas? Blood Supp. DANTE FA	180 180 180 180 180 180 180 180 180 180	ex
		ex
• •		
DANTE TRAINS1	200	
DANTE TRAINS2	0	
DANTE GRAD	20	
DANTE ESP	1.0	

TA: 10:00 PAT: Off Voxel size: 0.8×0.8×1.5 mm Rel. SNR: 1.00 USER: BP_GRASE_VASO_SH

Properties Prio Recon	Off	Orientation - Special sat.	Coronal None
Before measurement After measurement	Oll	Table position Table position	H 0 mm
Load to viewer	On	Inline Composing	Off
Inline movie	Off		
Auto store images	On	System	
Load to stamp segments	Off	T1	On
Load images to graphic	Off	M2	On
segments		B4	On
Auto open inline display	Off	M3	On
Start measurement without	On	V32	Off
further preparation		Positioning mode	REF
Wait for user to start	Off	MSMA	S - C - T
Start measurements	single	Sagittal	R >> L
Pouting		Coronal	A >> P
Routine		- Transversal	F >> H
Slab group 1	4	Save uncombined	Off
Slabs Dist factor	1	Coil Combine Mode	Adaptive Combine
Dist. factor	0 %	AutoAlign	·
Position	Isocenter	Auto Coil Select	Default
Orientation	Transversal		Otan dand
Phase enc. dir.	A >> P	Shim mode	Standard
Rotation	0.00 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freq. adjustment	Off
Slice oversampling	0.0 %	Assume Silicone	Off
Slices per slab	36	! Ref. amplitude 1H	220.000 V
FoV read	84.0 mm	Adjustment Tolerance	Auto
FoV phase	25.0 %	Adjust volume	
Slice thickness	1.50 mm 1500 ms	Position	Isocenter
TR TE		Orientation	Transversal
	24.02 ms	Rotation	0.00 deg
Averages Concatenations	1 1	R >> L	84 mm
Filter	None	A >> P	21 mm
Coil elements	B4;M2,3;T1	F >> H	54 mm
Con elements	D4,IVIZ,3,1 1	Physio	
Contrast		1st Signal/Mode	None
Magn. preparation	None	Composing	
Flip angle	180 deg	Composing	
Fat suppr.	Fat sat.	Sequence	
Fat sat. mode	Strong	Introduction	Off
Averaging mode	Long term	Dimension	3D
Reconstruction	Magnitude	Reordering	Centric
Measurements	400	Contrasts	1
Pause after meas.	0.0 s	Bandwidth	1144 Hz/Px
Multiple series	Off	Echo spacing	1.2 ms
1		Turbo factor	36
Resolution	440	- EPI factor	12
Base resolution	112	RF pulse type	Normal
Phase resolution	100 %	Gradient mode	Fast
Slice resolution	100 %		
Slice partial Fourier	Off	refocussing type	variable sinc
Interpolation	f 100	flip angle excit	90
1	Off		
PAT mode	None	phase encoding	ON
	None	phase encoding Maxwell compensation	Off
Prescan Normalize	None Off	phase encoding Maxwell compensation ICE program	Off single
	None	phase encoding Maxwell compensation	Off single 2560
Prescan Normalize Raw filter	None Off	phase encoding Maxwell compensation ICE program excite duration refoc duration	Off single 2560 3840
Prescan Normalize Raw filter Geometry	None Off Off	phase encoding Maxwell compensation ICE program excite duration refoc duration excite BWTP	Off single 2560 3840 12.0
Prescan Normalize Raw filter Geometry Series	None Off	phase encoding Maxwell compensation ICE program excite duration refoc duration excite BWTP refoc BWTP	Off single 2560 3840 12.0 8.0
Prescan Normalize Raw filter Geometry Series Sat. region 1	None Off Off Interleaved	phase encoding Maxwell compensation ICE program excite duration refoc duration excite BWTP refoc BWTP Variable Flip Angle 01	Off single 2560 3840 12.0 8.0
Prescan Normalize Raw filter Geometry Series	None Off Off	phase encoding Maxwell compensation ICE program excite duration refoc duration excite BWTP refoc BWTP	Off single 2560 3840 12.0 8.0

Variable Flip Angle 04 Variable Flip Angle 05 Variable Flip Angle 06 Variable Flip Angle 07 Variable Flip Angle 08 Variable Flip Angle 09 Variable Flip Angle 10 Variable Flip Angle 11 Variable Flip Angle 12 Variable Flip Angle 13 Variable Flip Angle 14 Variable Flip Angle 15 Variable Flip Angle 16 Variable Flip Angle 17 Variable Flip Angle 17 Variable Flip Angle 18 Variable Flip Angle 19 Variable Flip Angle 20 Regular or CS actual ETL Which areas? Blood Supp.	180 180 180 180 180 180 180 180
actual ETL	14
Which areas?	
• •	
DANTE FA	9
DANTE TRAINS1	200
DANTE CRAD	500
DANTE GRAD DANTE ESP	20 1.0
DAIN I E EOP	1.0

 $\label{local_control$

Properties Prio Recon	Off	Position Orientation	Isocenter Coronal
Before measurement	Oli	Special sat.	None
After measurement Load to viewer	0.5	Table position Table position	H
Inline movie	On Off	Inline Composing	0 mm Off
Auto store images	On	Inline Composing	Oil
Load to stamp segments	Off	System	
Load images to graphic	Off	T1	On
segments	Oli	M2	On
Auto open inline display	Off	B4	On
Start measurement without	On	M3	On
further preparation	OII	V32	Off
Wait for user to start	Off	Desitioning mode	DEE
Start measurements	single	Positioning mode MSMA	REF S - C - T
Start measurements	Sirigie		8 - C - 1 R >> L
Routine		Sagittal	
Slab group 1		Coronal	A >> P
Slabs	1	Transversal	F >> H
Dist. factor	0 %	Save uncombined	Off
Position	Isocenter	Coil Combine Mode	Adaptive Combine
Orientation	Transversal	AutoAlign	Dofords
Phase enc. dir.	A >> P	Auto Coil Select	Default
Rotation	0 deg	Shim mode	Standard
Phase oversampling	0 %	Adjust with body coil	Off
Slice oversampling	0.0 %	Confirm freq. adjustment	Off
Slices per slab	8	Assume Silicone	Off
FoV read	84 mm	! Ref. amplitude 1H	220.000 V
FoV phase	25.0 %	Adjustment Tolerance	Auto
Slice thickness	1.5 mm	Adjust volume	71010
TR	3000 ms	Position	Isocenter
TE	37.66 ms	Orientation	Transversal
Averages	1	Rotation	0.00 deg
Concatenations	1	R >> L	84 mm
Filter	None	A >> P	21 mm
Coil elements	B4;M2,3;T1	F >> H	12 mm
Contrast	, , ,		
Magn. preparation	Non-sel. IR	Physio 1st Signal/Mode	None
TI	100 ms	1st Signal/Mode	None
Flip angle	160 deg	Composing	
<u>-</u> ;	- , , , , ,	0	
Fat suppr. Fat sat. mode	Fat sat. Strong	Sequence	0"
	onong	Introduction	Off
Averaging mode	Long term	Dimension	3D
Reconstruction	Magnitude	Reordering	Centric
Measurements	200	Contrasts	2
Pause after meas.	0 s	Bandwidth	1144 Hz/Px
Multiple series	Off	Turbo factor	5
Resolution		EPI factor	28
Base resolution	112	RF pulse type	Normal
	100 %	Gradient mode	Fast
Phase resolution Slice resolution	100 % 100 %		
Slice partial Fourier	5/8	refocussing type	sinc 2560
	Off	flip angle excit	12
Interpolation	OII	phase encoding	0"
PAT mode	None	Maxwell compensation	Off
December 15-	Ο"	ICE program	Mosaic
Prescan Normalize	Off	excite duration	2560
Raw filter	Off	refoc duration	6
Geometry		excite BWTP	8
	Interleaved	refoc BWTP	0
Series	Interleaved	Variable Flip Angle 01	0 0
	Interleaved 20 mm		_

\	ariable Flip Angle	04	2300
\	ariable Flip Angle	05	0
\	ariable Flip Angle	06	180
\	ariable Flip Angle	07	180
\	ariable Flip Angle	08	180
\	ariable Flip Angle	09	180
\	ariable Flip Angle	10	180
\	ariable Flip Angle	11	180
\	ariable Flip Angle	12	180
\	ariable Flip Angle	13	180
\	ariable Flip Angle	14	180
\	ariable Flip Angle	15	180
\	ariable Flip Angle	16	180
\	ariable Flip Angle	17	180
\	ariable Flip Angle	18	180
\	ariable Flip Angle	19	180
\	ariable Flip Angle	20	40000
F	Regular or CS		Regular
а	ctual ETL		0
V	Vhich areas?		Visual Cortex
Е	Blood Supp.		Off
	DANTE FA		0
_	DANTE TRAINS1		0
	DANTE TRAINS2		0
_	ANTE GRAD		0
	DANTE ESP		0

 $\label{localization} $$ \USER\Feinberglab\Suhyung\GRASE\VASO\w/\CS\BP_GRASE_VASO_BloodNull_IR200ms $$ TA: 0:00 $$ PAT: Off Voxel size: 0.8 \times 0.8 \times 1.5 mm $$ Rel. SNR: 1.00 $$ USER: BP_GRASE_VASO_SH$$ $$ VASO_SH$$

Properties Prio Recon	Off	Position Orientation Special sat.	Isocenter Coronal None
Before measurement After measurement Load to viewer	On	Table position Table position	H 0 mm
Inline movie	Off	Inline Composing	Off
Auto store images	On		
Load to stamp segments	Off	System T1	On
Load images to graphic	Off	M2	On
segments		B4	On
Auto open inline display	Off	M3	On
Start measurement without	On	V32	Off
further preparation	Off		
Wait for user to start Start measurements	single	Positioning mode	REF
Start measurements	Single	MSMA Sagittal	S - C - T R >> L
Routine		- Coronal	A >> P
Slab group 1		Transversal	F >> H
Slabs	1	Save uncombined	Off
Dist. factor	0 %	Coil Combine Mode	Adaptive Combine
Position	Isocenter	AutoAlign	
Orientation	Transversal A >> P	Auto Coil Select	Default
Phase enc. dir. Rotation	0 deg	China mada	Oton dowd
Phase oversampling	0 %	Shim mode Adjust with body coil	Standard Off
Slice oversampling	0.0 %	Confirm freq. adjustment	Off
Slices per slab	8	Assume Silicone	Off
FoV read	84 mm	! Ref. amplitude 1H	220.000 V
FoV phase	25.0 %	Adjustment Tolerance	Auto
Slice thickness	1.5 mm	Adjust volume	, 101.0
TR	3000 ms	Position	Isocenter
TE	37.66 ms	Orientation	Transversal
Averages	1	Rotation	0.00 deg
Concatenations	1	R >> L	84 mm
Filter	None	A >> P	21 mm
Coil elements	B4;M2,3;T1	F >> H	12 mm
Contrast		Physio	
Magn. preparation	Non-sel. IR	1st Signal/Mode	None
TI	200 ms	1	
Flip angle	160 deg	Composing	
Fat suppr.	Fat sat.	Sequence	
Fat sat. mode	Strong	Introduction	Off
Averaging mode	Long term	Dimension	3D
Reconstruction	Magnitude	Reordering	Centric
Measurements	200	Contrasts	2
Pause after meas.	0 s	Bandwidth	1144 Hz/Px
Multiple series	Off	Turbo factor	5
Resolution		EPI factor	28
Base resolution	112	RF pulse type	Normal
Phase resolution	100 %	Gradient mode	Fast
Slice resolution	100 %	refocussing type	sinc 2560
Slice partial Fourier	5/8	flip angle excit	12
Interpolation	Off	phase encoding	
PAT mode	None	Maxwell compensation	Off
		ICE program	Mosaic
Prescan Normalize	Off	excite duration	2560
Raw filter	Off	refoc duration	6
Geometry		excite BWTP	8
Series	Interleaved	refoc BWTP	0
Sat ragion 1		Variable Flip Angle 01	0
Sat. region 1 Thickness	20 mm	Variable Flip Angle 02 Variable Flip Angle 03	1 1
11110111699	20 IIIII	Variable Filp Aligle 03	1

Variable Flip Angle 04	2200
Variable Flip Angle 05	0
Variable Flip Angle 06	180
Variable Flip Angle 07	180
Variable Flip Angle 08	180
Variable Flip Angle 09	180
Variable Flip Angle 10	180
Variable Flip Angle 11	180
Variable Flip Angle 12	180
Variable Flip Angle 13	180
Variable Flip Angle 14	180
Variable Flip Angle 15	180
Variable Flip Angle 16	180
Variable Flip Angle 17	180
Variable Flip Angle 18	180
Variable Flip Angle 19	180
Variable Flip Angle 20	40000
Regular or CS	Regular
actual ETL	0
Which areas?	Visual Cortex
Blood Supp.	Off
DANTE FA	0
DANTE TRAINS1	0
DANTE TRAINS2	0
DANTE GRAD	0
DANTE ESP	0

\\USER\Feinberglab\Suhyung\GRASE VASO w/ CS\BP_grase_IV_VFA_VASO_SH

TA: 12:03 PAT: Off Voxel size: 0.8x0.8x1.5 mm Rel. SNR: 1.00 USER: BP_grase_IV_CS_VASO_SH

Properties Prio Recon	Off	Position Orientation	Isocenter Coronal
Before measurement After measurement	O.I.	Special sat. Table position	None H
Load to viewer	On	Table position	0 mm
Inline movie	Off	Inline Composing	Off
Auto store images	On	System	
Load to stamp segments	Off	T1	On
Load images to graphic	Off	M2	On
segments	0"	B4	On
Auto open inline display	Off	M3	On
Start measurement without	On	V32	Off
further preparation Wait for user to start	Off		DEE.
Start measurements	single	Positioning mode	REF S - C - T
Start measurements	Sirigie	MSMA Societal	8 - C - 1 R >> L
Routine		Sagittal Coronal	R >> L A >> P
Slab group 1		Transversal	F >> H
Slabs	1	Save uncombined	Off
Dist. factor	0 %	Coil Combine Mode	Adaptive Combine
Position	Isocenter	AutoAlign	
Orientation	Transversal	Auto Coil Select	Default
Phase enc. dir.	A >> P		
Rotation	0.00 deg	Shim mode	Standard
Phase oversampling	0 %	Adjust with body coil	Off
Slice oversampling	0.0 %	Confirm freq. adjustment	Off
Slices per slab	8	Assume Silicone	Off
FoV read	84.0 mm	! Ref. amplitude 1H	220.000 V
FoV phase	25.0 %	Adjustment Tolerance	Auto
Slice thickness	1.50 mm	Adjust volume	
TR	3000 ms	Position	Isocenter
TE	37.7 ms	Orientation	Transversal
Averages	1	Rotation	0.00 deg
Concatenations Filter	None	R >> L	84 mm
Coil elements	B4;M2,3;T1	A >> P F >> H	21 mm 12 mm
Con elements	D4,IVIZ,3,1 1	F >> H	12 mm
Contrast		Physio	
Magn. preparation	Non-sel. IR	1st Signal/Mode	None
TI	1100 ms	Composing	
Flip angle	160 deg		
Fat suppr.	Fat sat.	Sequence	
Fat sat. mode	Strong	Introduction	Off
Averaging mode	Long term	Dimension	3D
Reconstruction	Magnitude	Reordering	Centric
Measurements	241	Contrasts	2
Pause after meas.	0.0 s	Bandwidth	1144 Hz/Px
Multiple series	Off	Echo spacing	1 ms
Resolution		Turbo factor	5
Base resolution	112	EPI factor	28
Phase resolution	100 %	RF pulse type	Normal
Slice resolution	100 %	Gradient mode	Fast
Slice partial Fourier	5/8	refocussing type	variable sinc
Interpolation	Off	BIR4: 2nd segm phase	338
	None	BIR4: duration	5120
PAT mode	None	excite duration	2560
Prescan Normalize	Off	refoc duration	2560
Raw filter	Off	excite BWTP	12.0
Goomotry		refoc BWTP	8.0
Geometry	Interlegue	actual ETL	5
Series	Interleaved	phase encoding	ON
Sat. region 1		Maxwell compensation	Off
Thickness	20 mm	ICE program	single
		11/10	-

Time Delay [us]	1280
Regular or CS	Regular
Variable Flip Angle 01	119
Variable Flip Angle 02	72
Variable Flip Angle 03	71
Variable Flip Angle 04	86
Variable Flip Angle 05	119
Variable Flip Angle 06	180
Variable Flip Angle 07	180
Variable Flip Angle 08	180
Variable Flip Angle 09	180
Variable Flip Angle 10	180
Variable Flip Angle 11	180
Variable Flip Angle 12	180
Variable Flip Angle 13	180
Variable Flip Angle 14	180
Crusher Gr	40000

\\USER\Feinberglab\Suhyung\GRASE VASO w/ CS\BP_grase_IV_CS_VASO_SH_24SL

TA: 12:03 PAT: Off Voxel size: 0.8x0.8x1.5 mm Rel. SNR: 1.00 USER: BP_grase_IV_CS_VASO_SH

Properties Prio Recon	Off	Position Orientation	Isocenter Coronal
Before measurement	Oli	Special sat.	None
After measurement		Table position	H
Load to viewer	On Off	Table position	0 mm
Inline movie	Off	Inline Composing	Off
Auto store images	On Off	System	
Load to stamp segments	Off Off		On
Load images to graphic segments	Oii	M2	On
	Off	B4	On
Auto open inline display Start measurement without		M3	On
	On	V32	Off
further preparation Wait for user to start	Off	B :::	
Start measurements		Positioning mode	REF
Start measurements	single	MSMA	S - C - T
Routine		Sagittal	R >> L
Slab group 1		Coronal	A >> P
Slabs	1	Transversal	F >> H
Dist. factor	0 %	Save uncombined	Off
Position	Isocenter	Coil Combine Mode	Adaptive Combine
Orientation	Transversal	AutoAlign	
Phase enc. dir.	A >> P	Auto Coil Select	Default
Rotation	0.00 deg	Shim mode	Standard
Phase oversampling	0 %	Adjust with body coil	Off
Slice oversampling	0.0 %	Confirm freq. adjustment	Off
Slices per slab	24	Assume Silicone	Off
FoV read	84.0 mm	! Ref. amplitude 1H	220.000 V
FoV phase	25.0 %	Adjustment Tolerance	Auto
Slice thickness	1.50 mm	Adjust volume	
TR	3000 ms	Position	Isocenter
TE	27.5 ms	Orientation	Transversal
Averages	1	Rotation	0.00 deg
Concatenations	1	R >> L	84 mm
Filter	None	A >> P	21 mm
Coil elements	B4;M2,3;T1	F >> H	36 mm
Contrast		Physio	
Magn. preparation	Non-sel. IR	1st Signal/Mode	None
TI	1100 ms	1	140110
Flip angle	180 deg	Composing	
Fat suppr.	Fat sat.	Sequence	
Fat sat. mode	Strong	Introduction	Off
		Dimension	3D
Averaging mode	Long term	Reordering	Centric
Reconstruction	Magnitude	Contrasts	2
Measurements	241	Bandwidth	1144 Hz/Px
Pause after meas.	0.0 s Off	Echo spacing	1.2 ms
Multiple series	Oli		
Resolution		Turbo factor	24
Base resolution	112	EPI factor	16
Phase resolution	100 %	RF pulse type	Normal
Slice resolution	100 %	Gradient mode	Fast
Slice partial Fourier	Off	refocussing type	variable sinc
Interpolation	Off	BIR4: 2nd segm phase	338
PAT mode	None	BIR4: duration	5120
PATINOGE	None	excite duration	2560
Prescan Normalize	Off	refoc duration	2560
Raw filter	Off	excite BWTP	12.0
Coometry		refoc BWTP	8.0
Geometry		actual ETL	10
Series	Interleaved	phase encoding	ON
Sat. region 1		Maxwell compensation	Off
Thickness	20 mm	ICE program	single
1	-	- I 9 · - · · ·	3 -

Time Delay [us]	1200
Regular or CS	CS
Variable Flip Angle 01	82
Variable Flip Angle 02	47
Variable Flip Angle 03	43
Variable Flip Angle 04	42
Variable Flip Angle 05	45
Variable Flip Angle 06	49
Variable Flip Angle 07	57
Variable Flip Angle 08	66
Variable Flip Angle 09	82
Variable Flip Angle 10	130
Variable Flip Angle 11	180
Variable Flip Angle 12	180
Variable Flip Angle 13	180
Variable Flip Angle 14	180
Crusher Gr	40000

Properties Prio Recon	Off	Position Orientation	Isocenter Coronal
Before measurement	Oli	Special sat.	None
After measurement Load to viewer	02	Table position Table position	H 0 mm
Inline movie	On Off	Inline Composing	0 mm Off
Auto store images	On	Inline Composing	Oil
Load to stamp segments	Off	System	
Load images to graphic	Off	T1	On
segments	Oll	M2	On
Auto open inline display	Off	B4	On
Start measurement without	On	M3	On
further preparation	OII	V32	Off
Wait for user to start	Off	Positioning mode	REF
Start measurements	single	Positioning mode MSMA	S-C-T
I	Sirigio	Sagittal	R >> L
Routine		——— Coronal	A >> P
Slab group 1		Transversal	F >> H
Slabs	1	Save uncombined	г >> п Off
Dist. factor	0 %		- · ·
Position	Isocenter	Coil Combine Mode AutoAlign	Adaptive Combine
Orientation	Transversal	AutoAlign Auto Coil Select	 Default
Phase enc. dir.	A >> P	Auto Coli Select	Delauit
Rotation	0 deg	Shim mode	Standard
Phase oversampling	0 %	Adjust with body coil	Off
Slice oversampling	0.0 %	Confirm freq. adjustment	Off
Slices per slab	24	Assume Silicone	Off
FoV read	89.6 mm	! Ref. amplitude 1H	220.000 V
FoV phase	25.0 %	Adjustment Tolerance	Auto
Slice thickness	0.8 mm	Adjust volume	
TR	3000 ms	Position	Isocenter
TE	27 ms	Orientation	Transversal
Averages	1	Rotation	0.00 deg
Concatenations	1	R >> L	90 mm
Filter	None	A >> P	23 mm
Coil elements	B4;M2,3;T1	F >> H	20 mm
Contrast		Physio	
Magn. preparation	Non-sel. IR	1st Signal/Mode	None
TI	380 ms		140110
Flip angle	160 deg	Composing	
Fat suppr.	Fat sat.	Sequence	
Fat sat, mode	Strong	Introduction	Off
		Dimension	3D
Averaging mode	Long term	Reordering	Centric
Reconstruction	Magnitude	Contrasts	2
Measurements	240	Bandwidth	1144 Hz/Px
Pause after meas.	0 s		
Multiple series	Off	Turbo factor	18
Resolution		EPI factor	16
Base resolution	112	RF pulse type	Normal
Phase resolution	100 %	Gradient mode	Fast
Slice resolution	100 %	refocussing type	variable sinc
Slice partial Fourier	6/8	BIR4: 2nd segm phase	338
Interpolation	Off	BIR4: duration	5120
		excite duration	2560
PAT mode	None	refoc duration	2560
Prescan Normalize	Off	excite BWTP	12
Raw filter	Off	refoc BWTP	8
	Çii	actual ETL	10
Geometry		phase encoding	ON
Series	Interleaved	Maxwell compensation	Off
Sat. region 1		ICE program	single
Thickness	20 mm	Time Delay [us]	1280
THOMICOS		I mile Delay [us]	1200

Regular or CS	CS
Variable Flip Angle 01	82
Variable Flip Angle 02	47
Variable Flip Angle 03	43
Variable Flip Angle 04	42
Variable Flip Angle 05	45
Variable Flip Angle 06	49
Variable Flip Angle 07	57
Variable Flip Angle 08	66
Variable Flip Angle 09	82
Variable Flip Angle 10	130
Variable Flip Angle 11	180
Variable Flip Angle 12	180
Variable Flip Angle 13	180
Variable Flip Angle 14	180
Crusher Gr	0

\USER\Feinberglab\Suhyung\GRASE VASO w/ CS\BP grase IV CS VASC	ASO SH
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TA: 12:03 PAT: Off Voxel size: 0.8x0.8x0.8 mm Rel. SNR: 1.00 USER: BP_grase_IV_CS_VASO_SH

Properties Prio Recon	ff	Position Orientation Special sat.	Isocenter Coronal None
Before measurement After measurement Load to viewer O	n	Table position Table position	H 0 mm
Inline movie O		Inline Composing	Off
Auto store images O		System	
Load to stamp segments O		T1	On
Load images to graphic Or segments	'II	M2	On
Auto open inline display O	off .	B4	On
Start measurement without O		M3	On
further preparation		V32	Off
Wait for user to start O	ff	Positioning mode	REF
Start measurements sin	ngle	MSMA	S - C - T
Routine		Sagittal	R >> L
Slab group 1		Coronal	A >> P
Slabs 1		Transversal Save uncombined	F >> H Off
	%	Coil Combine Mode	Adaptive Combine
	ocenter	AutoAlign	
	ransversal	Auto Coil Select	Default
	>> P .00 deg		Otendend
	%	Shim mode Adjust with body coil	Standard Off
	0 %	Confirm freq. adjustment	Off
Slices per slab 24		Assume Silicone	Off
	9.6 mm	! Ref. amplitude 1H	220.000 V
	5.0 %	Adjustment Tolerance	Auto
	.80 mm	Adjust volume	
	000 ms	Position	Isocenter
	2.8 ms	Orientation	Transversal
Averages 1 Concatenations 1		Rotation	0.00 deg
	one	R >> L A >> P	90 mm 23 mm
	4;M2,3;T1	F >> H	20 mm
· ·	, ,-,		20
Contrast Magn. preparation No	on-sel. IR	Physio 1st Signal/Mode	None
5 , ,	100 ms	•	None
	80 deg .	Composing	
	at sat.	Sequence	
Fat sat. mode St	trong	Introduction	Off
Averaging mode Lo	ong term	Dimension	3D
	lagnitude	Reordering	Centric
Measurements 24	41	Contrasts	2
	.0 s	Bandwidth	1144 Hz/Px 1.2 ms
Multiple series O	ff	Echo spacing	1.2 1115
Resolution		Turbo factor	24
	12	EPI factor	12
	00 %	RF pulse type Gradient mode	Normal Fast
	00 %		rasi
Slice partial Fourier O		refocussing type	sinc 2560
Interpolation O	'II	BIR4: 2nd segm phase	338
PAT mode No	one	BIR4: duration	5120
Prescan Normalize O	off	excite duration refoc duration	2560 2560
Raw filter O		excite BWTP	12.0
		refoc BWTP	8.0
Geometry	storlogyed	actual ETL	10
Series In	terleaved	phase encoding	ON
Sat. region 1	_	Maxwell compensation	Off
Thickness 20	0 mm	ICE program	single

Time Delay [us] Regular or CS	1280 CS
Variable Flip Angle 01	82
Variable Flip Angle 02	47
Variable Flip Angle 03	43
Variable Flip Angle 04	42
Variable Flip Angle 05	45
Variable Flip Angle 06	49
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Variable Flip Angle 08	66
Variable Flip Angle 09	82
Variable Flip Angle 10	130
Variable Flip Angle 11	180
Variable Flip Angle 12	180
Variable Flip Angle 13	180
Variable Flip Angle 14	180
Crusher Gr	40000

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