TUMOR BRAIN 3T R5.6

INSTRUCTIONS AND PATIENT PREPARATION

Instructions	• No patient preparation • Contrast used to evaluate blood-brain barrier and for suspected tumor or infection
Position	Supine, head first
Coil	SENSE-Head-8 channel coil preferred
Landmark	Glabella

CONTRAST AGENT PARAMETERS

Contrast Agent	Dose	Injection Rate	Dose Timing Method and Scan Delay
Gadopiclenol (VUEWAY)	0.05 mmol/kg	5 mL/sec	Power injection
Saline Flush	10-20 mL	5 mL/sec	Power injection
Comments	Report agent administered and dose		

Disclaimer: The MR Protocols information is provided by independent physicians and technologists and is not intended to provide definitive or complete medical instructional or treatment information. Products referenced herein should be used consistently with their package inserts, and any devices referenced herein should be used consistently with the operation instructions provided by their respective manufactures. Northwest Imaging Forums, Inc. and Bracco Diagnostics Inc. do not offer medical advice and shall not be responsible for any person's reliance on this protocol.

Supported by an educational grant from Bracco Diagnostics Inc.

MR Gadopiclenol (VUEWAY®) Protocol for Philips Healthcare Systems
Central Nervous System

IMAGING FORUMS, INC.

INFO PAGE

Scan Description	Survey	DWI	AXIAL SWIp 1m8s cs7 res0 8 x 5	AXIAL 3D FFE SPGR T1 Pre	AXIAL 3D FLAIR +Gd	AXIAL T2 TSE +Gd	AXIAL 3D T1 TSE Fat Sat +Gd	AXIAL 3D FFE SPGR T1 +Gd
Total scan duration	00:31.4	00:44.8	01:08.0	02:06.0	01:40.8	00:37.4	01:35.4	02:06.0
Rel. SNR	1	1	1	0	0	1	1	0
Act. TR(ms)	—	3732	—	—	—	3120	600	—
Act. TE(ms)	—	91	—	—	347	80	35	—
Act. TR/TE(ms)	11 / 4.6	—	—	25 / 3.8	—	—	—	25 / 3.9
Act. TR/TI(ms)	—	—	—	—	4800 / 1650	—	—	—
Act. TR/TE1/delta TE(ms)	—	—	31 / 7.2 / 6.2	—	—	—	—	—
ACQ matrix M x P	268 x 128	152 x 122	288 x 240	268 x 267	268 x 268	404 x 238	268 x 266	268 x 267
ACQ voxel MPS (mm)	0.97 / 2.03 / 10.0	1.51 / 1.88 / 4.00	0.80 / 0.80 / 2.50	0.90 / 0.90 / 1.80	0.90 / 0.90 / 1.80	0.57 / 0.76 / 5.00	0.90 / 0.90 / 1.80	0.90 / 0.90 / 1.80
REC voxel MPS (mm)	0.90 / 0.90 / 10.0	1.20 / 1.20 / 4.00	0.45 / 0.45 / 1.25	0.71 / 0.71 / 0.90	0.83 / 0.83 / 0.90	0.45 / 0.45 / 5.00	0.38 / 0.38 / 0.90	0.71 / 0.71 / 0.90
Scan percentage (%)	48	80	100	100	100	75	99	100
Packages	—	1	—	—	—	2	—	—
TFE shots	2	—	—	—	—	—	—	—
TFE dur. shot / acq (ms)	1162.5 / 704.0	—	—	—	—	—	—	—
TFE shot interval (ms)	1162.5	—	—	—	—	—	—	—
Min. TI delay	397.4	—	—	—	—	—	—	—
Min. slice gap (mm)	—	0	—	—	—	5	—	—
EPIfactor	—	41	—	—	—	—	—	—
Act.slicegap (mm)	—	—	-1.3	-0.9	-0.9	—	-0.9	-0.9
Act. WFS (pix) / BW (Hz)	3.101 / 140.1	—	1.701 / 255.3	1.201 / 361.6	—	—	—	1.201 / 361.6
Min. WFS (pix) / Max. BW (Hz)	0.587 / 740.3	—	0.570 / 761.4	0.670 / 647.8	—	—	—	0.512 / 848.0
Min. TR/TE(ms)	9.4 / 3.7	—	—	17 / 3.8	—	—	—	16 / 2.6
Min. TR/TE1/delta TE(ms)	—	—	29 / 5.2 / 5.7	—	—	—	—	—
WFS (pix) / BW (Hz)	—	15.266 / 28.4	—	—	0.512 / 848.0	2.555 / 170.0	1.662 / 261.3	—
TSE es / shot(ms)	—	—	—	—	3.6 / 662	9.4 / 151	7.0 / 176	—
TEeff / TEequiv(ms)	—	—	—	—	347 / 144	80 / 72	35 / 19	—
Min. TR(ms)	—	—	—	—	—	3120	330	—
Min. TR/TI(ms)	—	—	—	—	2462 / 50	—	—	—
BW in EPI freq. dir. (Hz)	—	1447.8	—	—	—	—	—	—
SPIR offset act./default (Hz)	—	220 [220]	—	—	—	—	—	—
Local torso SAR	< 12 %	< 32 %	< 8 %	< 67 %	< 16 %	< 100 %	< 20 %	< 63 %
Whole body SAR / level	< 0.4 W/kg / normal	< 1.0 W/kg / normal	< 0.3 W/kg / normal	< 2.2 W/kg / 1st level	< 0.5 W/kg / normal	< 3.2 W/kg / 1st level	< 0.6 W/kg / normal	< 2.0 W/kg / normal
SED	0.0 kJ/kg	0.0 kJ/kg	0.0 kJ/kg	< 0.3 kJ/kg	< 0.1 kJ/kg	< 0.1 kJ/kg	< 0.1 kJ/kg	< 0.3 kJ/kg
Coil Power	0%	0%	0%	0%	0%	1%	0%	0%
Max B1+rms	0.79 uT	1.30 uT	0.65 uT	1.88 uT	0.98 uT	2.29 uT	1.02 uT	1.81 uT
PNS / level	53 % / normal	80 % / 1st level	78 % / normal	27 % / normal	68 % / normal	62 % / normal	73 % / normal	67 % / normal
dB/dt	46.6 T/s	105.0 T/s	61.9 T/s	16.1 T/s	79.5 T/s	81.5 T/s	84.1 T/s	88.5 T/s
Sound Pressure Level (dB)	10.4	14.5	8	-2	12.2	5	7.6	6.1
Boil-off (hPa/h)	—	12.3	5.8	1.5	1.3	2	1.7	2.5
Max Boil-off (hPa/h)	—	12.3	5.8	1.5	10	2	2.7	2.5

Disclaimer: The MR Protocols information is provided by independent physicians and technologists and is not intended to provide definitive or complete medical instructional or treatment information. Products referenced herein should be used consistently with their package inserts, and any devices referenced herein should be used consistently with the operation instructions provided by their respective manufactures. Northwest Imaging Forums, Inc. and Bracco Diagnostics Inc. do not offer medical advice and shall not be responsible for any person's reliance on this protocol.

Supported by an educational grant from Bracco Diagnostics Inc.

Boil-off (hPa)	—	0.2	0.1	0.1	0	0	0	0.1

Disclaimer: The MR Protocols information is provided by independent physicians and technologists and is not intended to provide definitive or complete medical instructional or treatment information. Products referenced herein should be used consistently with their package inserts, and any devices referenced herein should be used consistently with the operation instructions provided by their respective manufactures. Northwest Imaging Forums, Inc. and Bracco Diagnostics Inc. do not offer medical advice and shall not be responsible for any person's reliance on this protocol.

Supported by an educational grant from Bracco Diagnostics Inc.

MR Gadopiclenol (VUEWAY®) Protocol for Philips Healthcare Systems
Central Nervous System

IMAGING FORUMS, INC.

GEOMETRY

Scan Description	Survey	DWI	AXIAL SWIp 1m8s cs7 res0 8 x 5	AXIAL 3D FFE SPGR T1 Pre	AXIAL 3D FLAIR +Gd	AXIAL T2 TSE +Gd	AXIAL 3D T1 TSE Fat Sat +Gd	AXIAL 3D FFE SPGR T1 +Gd
Nucleus	—	H1	H1	H1	H1	H1	H1	H1
SmartSelect	—	yes	yes	yes	yes	yes	yes	yes
Coil 1 (exclude)	—	None	None	None	None	None	None	None
Uniformity	Classic	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
FOV AP (mm)	260	230	230	240	240	230	240	240
FOV FH (mm)	260	149	138	169	169	150	169	169
FOV RL (mm)	—	230	192	240	240	181	240	240
stack RL (mm)	50	—	—	—	—	—	—	—
ACQ voxel size AP (mm)	2	1.9	0.8	0.9	0.9	0.6	0.9	0.9
ACQ voxel size FH (mm)	1	—	2.5	1.8	1.8	—	1.8	1.8
ACQ voxel size RL (mm)	—	1.5	0.8	0.9	0.9	0.8	0.9	0.9
Slice thickness (mm)	10	4	—	—	—	5	—	—
Recon voxel size AP (mm)	0.9	1.2	0.4	0.7	0.8	0.4	0.4	0.7
Recon voxel size FH (mm)	0.9	—	1.3	0.9	0.9	—	0.9	0.9
Recon voxel size RL (mm)	—	1.2	0.4	0.7	0.8	0.4	0.4	0.7
Fold-over suppression	no	no	no	no	no	no	no	no
Slice oversampling	—	—	default	default	default	—	user defined	default
oversample factor	—	—	—	—	—	—	1.3	—
ENCASE enable	—	—	no	no	—	—	—	no
RF select. FOS	—	—	—	—	no	—	no	—
Reconstruction matrix	288	192	512	336	288	512	640	336
SENSE	no	yes	no	no	no	no	no	no
Preduction (AP)	—	3	—	—	—	—	—	—
MB SENSE	—	no	—	—	—	—	—	—
CS-SENSE	—	no	yes	yes	yes	yes	yes	yes
reduction	—	—	7	7	12	3	8.5	7
denoising	—	—	system default	system default	system default	system default	system default	system default
k-t Acceleration	—	no	no	no	no	no	no	no
Stacks	3	1	1	1	1	1	1	1
current	A	—	—	—	—	—	—	—
type	parallel	parallel	—	—	—	parallel	—	—
slices	3	30	110	188	188	30	188	188
slice gap	user defined	user defined	—	—	—	user defined	—	—
gap (mm)	10	1	—	—	—	0	—	—
slice orientation	sagittal	transverse	transverse	transverse	transverse	transverse	transverse	transverse
fold-over direction	AP	AP	RL	RL	RL	RL	RL	RL
fat shift direction	F	P	P	P	P	P	P	P
Minimum number of packages	—	1	—	—	—	1	—	—
Multi-chunk	—	—	no	no	no	—	no	no
Slice scan order	default	default	—	—	—	default	—	—

Disclaimer: The MR Protocols information is provided by independent physicians and technologists and is not intended to provide definitive or complete medical instructional or treatment information. Products referenced herein should be used consistently with their package inserts, and any devices referenced herein should be used consistently with the operation instructions provided by their respective manufactures. Northwest Imaging Forums, Inc. and Bracco Diagnostics Inc. do not offer medical advice and shall not be responsible for any person's reliance on this protocol.

Supported by an educational grant from Bracco Diagnostics Inc.

Stack scan order	ascend	—	—	—	—	—	—	—
Stack sort order	no	—	—	—	—	—	—	—
O-MAR	—	—	—	—	no	no	no	—
Large table movement	—	no	no	no	no	no	no	no
Plan Align	no	no	no	no	no	no	no	no
REST slabs	0	0	0	1	0	1	0	1
type	—	—	—	parallel	—	parallel	—	parallel
thickness (mm)	—	—	—	60	—	60	—	60
position	—	—	—	feet	—	feet	—	feet
gap	—	—	—	default	—	default	—	default
power	—	—	—	1	—	1	—	1
Interactive positioning	—	no	no	no	no	no	no	no
Allow table movement	—	no	no	no	no	no	no	no
Patient position	—	head first	head first	head first	head first	head first	head first	head first
Patient body position	—	head first	head first	head first	head first	head first	head first	head first
Patient orientation	—	supine	supine	supine	supine	supine	supine	supine
Patient body orientation	—	supine	supine	supine	supine	supine	supine	supine

Disclaimer: The MR Protocols information is provided by independent physicians and technologists and is not intended to provide definitive or complete medical instructional or treatment information. Products referenced herein should be used consistently with their package inserts, and any devices referenced herein should be used consistently with the operation instructions provided by their respective manufactures. Northwest Imaging Forums, Inc. and Bracco Diagnostics Inc. do not offer medical advice and shall not be responsible for any person's reliance on this protocol.

Supported by an educational grant from Bracco Diagnostics Inc.

MR Gadopiclenol (VUEWAY®) Protocol for Philips Healthcare Systems
Central Nervous System

IMAGING FORUMS, INC.

CONTRAST

Scan Description	Survey	DWI	AXIALSWIp1m8s cs7 res0 8 x 5	AXIAL3D FFE SPGR T1Pre	AXIAL3D FLAIR +Gd	AXIALT2 TSE +Gd	AXIAL3D T1 TSE Fat Sat+Gd	AXIAL3D FFE SPGR T1+Gd		
Scan type	&#8213	Imaging	Imaging	Imaging	Imaging	Imaging	Imaging	Imaging	Scan type	—
Scan mode	M2D	MS	3D	3D	3D	MS	3D	3D	Scan mode	—
Modified SE	&#8213	no	&#8213	&#8213	&#8213	no	no	&#8213	Modified SE	—
Contrast enhancement	T1	&#8213	T1	T1	&#8213	&#8213	&#8213	T1	Contrast enhancement	—
Acquisition mode	&#8213	cartesian	cartesian	cartesian	cartesian	cartesian	cartesian	cartesian	Acquisition mode	—
Fast Imaging mode	TFE	EPI	none	none	TSE	TSE	TSE	none	Fast Imaging mode	—
3D VIEW	&#8213	&#8213	&#8213	&#8213	Brain FLAIR	&#8213	Brain T1	&#8213	3D VIEW	—
TFE factor	64	&#8213	&#8213	&#8213	&#8213	&#8213	&#8213	&#8213	TFE factor	—
TSE factor	&#8213	&#8213	&#8213	&#8213	178	16	20	&#8213	TSE factor	—
Echoes	1	1	4	1	1	1	1	1	Echoes	—
TE	in-phase	shortest	user defined	shortest	shortest	user defined	shortest	user defined	TE	—
Flip angle (deg)	15	90	17	30	&#8213	90	90	30	Flip angle (deg)	—
Refocusing control	&#8213	&#8213	&#8213	&#8213	constant	constant	constant	&#8213	Refocusing control	—
TR	user defined	shortest	user defined	user defined	user defined	range	user defined	user defined	TR	—
Halfscan	no	yes	no	no	no	no	no	no	Halfscan	—
Water-fat shift	user defined	minimum	user defined	user defined	maximum	maximum	maximum	user defined	Water-fat shift	—
IR delay (ms)	&#8213	&#8213	&#8213	&#8213	1650	&#8213	&#8213	&#8213	IR delay (ms)	—
RF Shims	fixed	fixed	fixed	adaptive	fixed	adaptive	fixed	adaptive	RF Shims	—
Shim	default	auto	auto	auto	default	default	auto	auto	Shim	—
mDIXON	no	no	no	no	no	no	no	no	mDIXON	—
Fat suppression	no	SPIR	no	no	SPIR	no	SPAIR	no	Fat suppression	—
Grad Rev Fat suppr	&#8213	yes	&#8213	&#8213	no	no	no	&#8213	Grad Rev Fat suppr	—
Water suppression	no	no	no	no	no	no	no	no	Water suppression	—
TFE prepulse	invert	&#8213	&#8213	&#8213	&#8213	&#8213	&#8213	&#8213	TFE prepulse	—
BB pulse	&#8213	no	&#8213	&#8213	no	no	no	&#8213	BB pulse	—
MTC	no	no	no	no	no	no	no	no	MTC	—
T2prep	&#8213	&#8213	&#8213	&#8213	yes	&#8213	&#8213	&#8213	T2prep	—
APT	&#8213	no	&#8213	&#8213	&#8213	no	no	&#8213	APT	—
Custom prepulse	&#8213	no	no	no	no	no	no	no	Custom prepulse	—
MDME	&#8213	no	no	no	no	no	no	no	MDME	—
Diffusion mode	&#8213	DWI	no	no	no	no	no	no	Diffusion mode	—
T1 mapping	&#8213	no	no	no	no	no	no	no	T1 mapping	—
Transmit channels	&#8213	both	both	both	both	both	both	both	Transmit channels	—
SAR mode	high	high	high	high	high	high	high	high	SAR mode	—
B1 mode	default	default	default	default	default	default	default	default	B1 mode	—
SAR allow first level	yes	yes	yes	yes	yes	yes	yes	yes	SAR allow first level	—
Patient pregnancy	&#8213	no	no	no	no	no	no	no	Patient pregnancy	—
Patient WB SAR [W/kg]	&#8213	—	—	—	—	—	—	—	Patient WB SAR [W/kg]	—
Patient Head SAR [W/kg]	&#8213	—	—	—	—	—	—	—	Patient Head SAR [W/kg]	—

Disclaimer: The MR Protocols information is provided by independent physicians and technologists and is not intended to provide definitive or complete medical instructional or treatment information. Products referenced herein should be used consistently with their package inserts, and any devices referenced herein should be used consistently with the operation instructions provided by their respective manufactures. Northwest Imaging Forums, Inc. and Bracco Diagnostics Inc. do not offer medical advice and shall not be responsible for any person's reliance on this protocol.

Supported by an educational grant from Bracco Diagnostics Inc.

Patient max. dB/dt [T/s]	&#8213	—	—	—	—	—	—	—	Patient max. dB/dt [T/s]	—
Max slewrate [T/m/s]	&#8213	—	—	—	—	—	—	—	Max slewrate [T/m/s]	—
Max. B1+rms [uT]	&#8213	—	—	—	—	—	—	—	Max. B1+rms [uT]	—
PNS mode	low	high	moderate	high	moderate	high	moderate	high	PNS mode	—
Gradient mode	default	maximum	maximum	maximum	maximum	maximum	maximum	maximum	Gradient mode	—
SofTone mode	no	no	no	ComforTone	no	no	no	no	SofTone mode	—

MOTION

Scan Description	Survey	DWI	AXIAL SWIp 1m8s cs7 res0 8 x 5	AXIAL 3D FFE SPGR T1 Pre	AXIAL 3D FLAIR +Gd	AXIAL T2 TSE +Gd	AXIAL 3D T1 TSE Fat Sat +Gd	AXIAL 3D FFE SPGR T1 +Gd
Cardiac synchronization	no	no	no	no	no	no	no	no
Heart rate > 250 bpm	—	no	no	no	no	no	no	no
Respiratory compensation	no	no	no	no	no	no	no	no
Navigator respiratory comp	—	no	no	no	no	no	no	no
Flow compensation	no	no	yes	no	no	no	no	no
Temporal slice spacing	—	default	—	—	—	default	—	—
Motion smoothing	—	—	—	—	no	no	no	—
fMRI echo stabilisation	—	—	no	no	—	—	—	no
NSA	1	1	1	1	1	1	1	1
MRE enable	no	no	no	no	no	no	no	no

DYNAMIC ANGIO

Scan Description	Survey	DWI	AXIAL SWIp 1m8s cs7 res0 8 x 5	AXIAL 3D FFE SPGR T1 Pre	AXIAL 3D FLAIR +Gd	AXIAL T2 TSE +Gd	AXIAL 3D T1 TSE Fat Sat +Gd	AXIAL 3D FFE SPGR T1 +Gd
Angio / Contrast enh.	no	—	no	no	—	—	—	no
Quantitative flow	—	—	no	no	—	—	—	no
CENTRA	—	—	—	—	no	—	no	—
Manual start	no	no	no	no	no	no	no	no
Dynamic study	no	no	no	no	no	no	no	no
Arterial Spin labeling	—	no	no	no	no	no	no	no

Disclaimer: The MR Protocols information is provided by independent physicians and technologists and is not intended to provide definitive or complete medical instructional or treatment information. Products referenced herein should be used consistently with their package inserts, and any devices referenced herein should be used consistently with the operation instructions provided by their respective manufactures. Northwest Imaging Forums, Inc. and Bracco Diagnostics Inc. do not offer medical advice and shall not be responsible for any person's reliance on this protocol.

Supported by an educational grant from Bracco Diagnostics Inc.

MR Gadopiclenol (VUEWAY®) Protocol for Philips Healthcare Systems
Central Nervous System

IMAGING FORUMS, INC.

POST PROCESSING

Scan Description	Survey	DWI	AXIAL SWIp 1m8s cs7 res0 8 x 5	AXIAL 3D FFE SPGR T1 Pre	AXIAL 3D FLAIR +Gd	AXIAL T2 TSE +Gd	AXIAL 3D T1 TSE Fat Sat +Gd	AXIAL 3D FFE SPGR T1 +Gd
Preparation phases	auto	auto	auto	auto	auto	auto	auto	auto
Interactive F0	no	no	no	no	no	no	no	no
Quick Survey	default	default	default	default	default	default	default	default
SmartPlan survey	—	no	no	no	no	no	no	no
B0 field map	—	no	no	no	no	no	no	no
B1 field map	—	no	no	no	no	no	no	no
MIP/MPR	no	no	no	no	no	no	no	no
SWIp	—	—	yes	no	—	—	—	no
Images	M, no, no, no	M, (3) no	SW-M, (3) no	M, (3) no	M, (3) no	M, (3) no	M, (3) no	M, (3) no
Autoview image	M	M	—	M	M	M	M	M
Calculated images	no, no, no, no	(4) no	—	(4) no	—	(4) no	(4) no	(4) no
Reference tissue	White matter	Grey matter	White matter	White matter	Grey matter	Grey matter	White matter	White matter
Recon compression	No	No	No	No	No	No	No	No
Preset window contrast	soft	soft	soft	soft	soft	soft	soft	soft
Reconstruction mode	immediate	real time	real time	immediate	real time	real time	immediate	immediate
Save raw data	no	no	no	no	no	no	no	no
Hardcopy protocol	no	no	no	no	no	no	no	no
Image filter	system default	system default	system default	system default	system default	system default	system default	system default
Uniformity correction	no	no	no	no	yes	no	no	no
Geometry correction	default	default	default	default	default	default	default	default
EPI geometry correction	—	no	—	—	—	—	—	—
ADC correction	—	no	—	—	—	—	—	—
Elliptical k-space shutter	—	—	default	no	default	—	default	no
Free rotatable	—	no	no	no	no	no	no	no

Disclaimer: The MR Protocols information is provided by independent physicians and technologists and is not intended to provide definitive or complete medical instructional or treatment information. Products referenced herein should be used consistently with their package inserts, and any devices referenced herein should be used consistently with the operation instructions provided by their respective manufactures. Northwest Imaging Forums, Inc. and Bracco Diagnostics Inc. do not offer medical advice and shall not be responsible for any person's reliance on this protocol.

Supported by an educational grant from Bracco Diagnostics Inc.