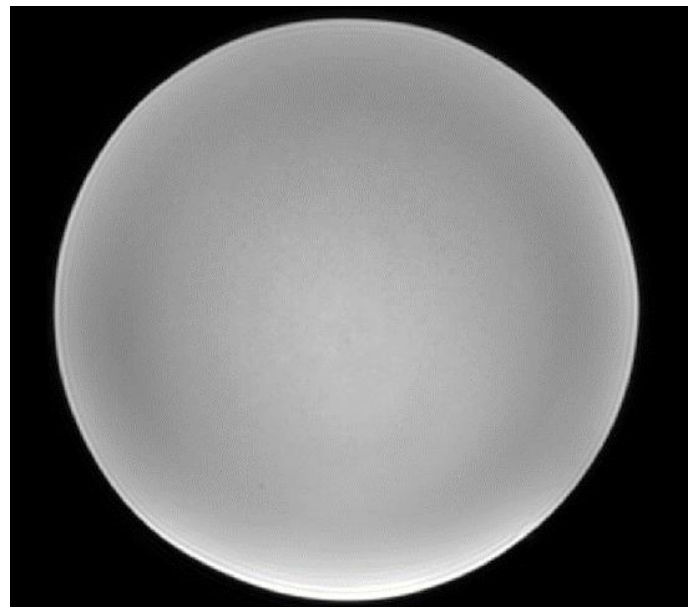


FUNSTAR

Functional Stability Reference



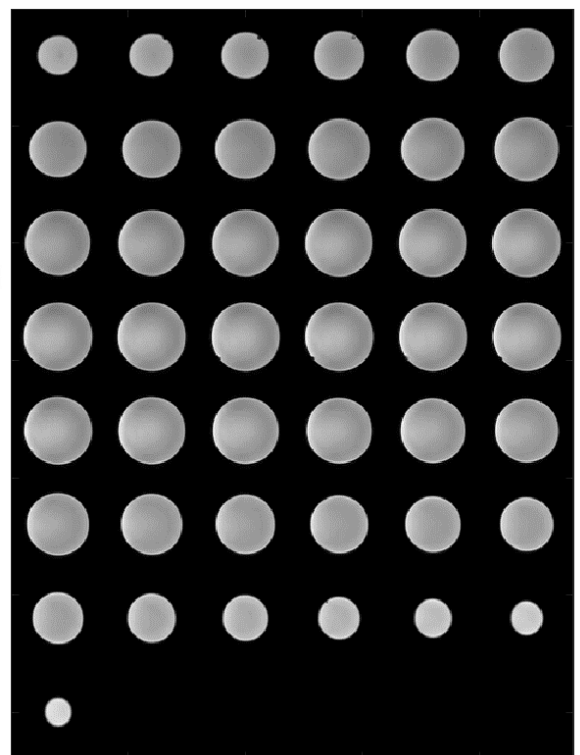
Susceptibility Weighted Image acquired at 3T

Ensure exceptional fMRI stability using the FUNSTAR phantom.

- Spherical gel phantom for fMRI stability (fBIRN) testing.
- Physiologically matched relaxation times.
- Use with GSP Cloud for an easy-to-use, automated fBIRN stability analysis.

Functional Magnetic Resonance Imaging (fMRI) pushes an MRI scanner's hardware to the limits of its performance, whilst demanding exceptional stability in order to detect small changes in blood oxygenation levels. For over 15 years MRI system stability for fMRI has been monitored using the fBIRN fMRI quality assurance protocol¹, which specifies a phantom, imaging protocol and analysis algorithm to quantify performance.

Gold Standard Phantoms is pleased to offer a spherical gel stability phantom that meets the characteristics established by the fBIRN committee. Designed to fit within modern multi-channel MRI head coils, the **FUNSTAR** (Functional Stability Reference) uses a proprietary, water-based, synthetic gel inside a HDPE spherical shell. It can be used in conjunction with GSP Cloud, providing an easy-to-use, automated fBIRN stability analysis for dedicated management of quality assurance tests.

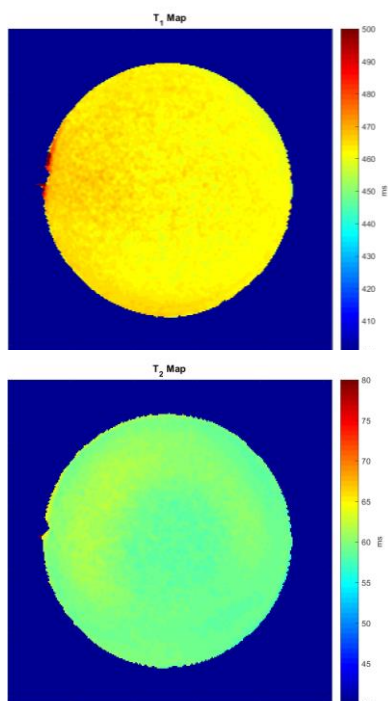


EPI volume acquired at 3T

¹ Report on a multicenter fMRI quality assurance protocol. Friedman and Glover. JMRI p827-839, Vol 23, Issue 6, 2006. (<https://doi.org/10.1002/jmri.20583>)

FUNSTAR

Functional Stability Reference



We use a synthetic polymer as a gelling agent that offers several advantages over the traditional agar/agarose fBIRN phantom. Being a natural product derived from seaweed, agar is subject to significant variation in gel properties and relaxation times from batch to batch. Due to the high temperature processing that agar requires, traditional fBIRN phantoms tend to suffer from significant bubbles. In addition, agar is mechanically fragile and a growth medium for bacteria.

Our new gel:

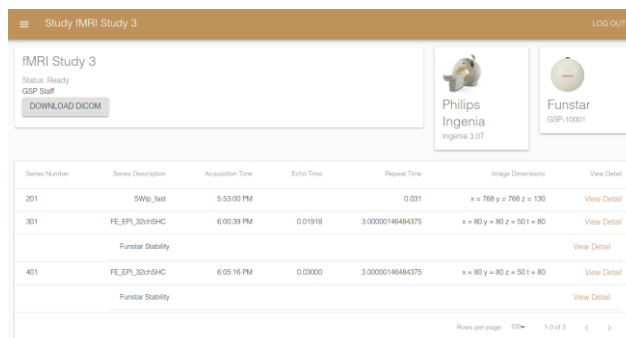
- Is processed at room temperature, therefore it is practically bubble free.
- Has relaxation times that are more standardised as they are controlled by paramagnetic salts.
- Has some elasticity, making it more mechanically stable and less prone to fracturing than agar.

Automate your fBIRN QA

FUNSTAR is designed to work with GSP Cloud: Gold Standard Phantoms' cloud-based image platform for the analysis of MRI data acquired with phantoms. GSP Cloud makes it easy to keep track of your routine fMRI QA by combining an automated fBIRN analysis pipeline with a friendly, yet powerful interface that makes uploading data and viewing results easy.

The process is simple:

1. Simply upload your QA study data in DICOM format.
2. Select the EPI time-series to process.
3. The automated fBIRN analysis pipeline will run, producing results that can be downloaded in PDF format.
4. Key performance metrics can be viewed longitudinally, making it easy to see if there are changes in system stability.



Series Number	Series Description	Acquisition Time	Echo Time	Repeat Time	Image Dimensions	View Detail
201	SWIs_test	5:53:00 PM		0:031	x = 768 y = 768 z = 130	View Detail
301	FE_EPI_320xSHC	6:00:39 PM	0.01918	3.00000146484375	x = 80 y = 80 z = 501 = 80	View Detail
Funstar Stability						
401	FE_EPI_320xSHC	6:05:16 PM	0.02000	3.00000146484375	x = 80 y = 80 z = 501 = 80	View Detail
Funstar Stability						

Contact info@goldstandardphantoms.com or visit www.goldstandardphantoms.com/funstar for more details.

Compatible MRI Coils	All multi-channel clinical head coils currently on the market
Sphere Diameter	180mm OD
Phantom Contents	Proprietary water-based synthetic gel doped for physiologically relevant T ₁ /T ₂ values (approximately 460ms/60ms @ 3T, 20°C)
Warranty	One year
Materials	HDPE (shell) Nylon (Filling Plug) Nitrile (Plug Gasket)
Includes	Liquid crystal thermometer Protective foam lined box Stand
Optional Accessories	Foam insert for repeatable positioning in a head coil