

Materials List for:

Glutamine Flux Imaging Using Genetically Encoded Sensors

Julien Besnard¹, Sakiko Okumoto¹

¹Virginia Tech

Correspondence to: Sakiko Okumoto at sokumoto@vt.edu

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Materials

Name	Company	Catalog Number	Comments
Inverted fluorescent microscope	Olympus	IX81F-3-5	An equivalent inverted fluorescent microscope from other suppliers would also be appropriate.
Excitation filter (mTFP1)	Omega Optical	3RD450-460	Band width 450-460 nm
Excitation filter (Venus)	Chroma	ET500/20	Band width 490-510 nm
Emission filter (mTFP1)	Chroma	HQ495/30m	Band width 475-505 nm
Emission filter (Venus)	Chroma	ET535/30m	Band width 520-550 nm
Dichroic mirror (FRET channels)	Chroma	470dcxr	Long pass, 470 nm cut off
Dichroic mirror (YFP channel)	Chroma	89002bs	Passes 445-490 nm, 510-560 nm, 590-680 nm
mCherry filter set	Chroma	49008	Excitation 540-580 nm, long pass dichroic with 585 nm cut off, emission filter 595-695 nm
Light source	Olympus	U-LH100L-3-5	LED- or halogen light source that produces stable light intensity, mercury lamps are not recommended
CCD camera	Qimaging	Rolera-MGi EMCCD	
Apochromatic fluorescence objective	Olympus		
Perfusion system, ValveBank II	AutoMate Scientific	[01-08]	Other perfusion systems that allow fast solution exchange would also work
Laminar-flow chambers	C&L Instruments	VC-MPC-TW	Other laminar-flow chambers would also work.
Chambered slide	Lab-Tek	154534	For open-chamber experiments
Perfusion pump	Thermo Scientific	74-046-12131	For open-chamber experiments
Software supporting ratiometric measurements	Intellegent Imaging Innovation	Slidebook 5.5	
Laminar flow biosafety cabinet	ESCO	LA-3A2	
Isotemp CO ₂ Incubator	Thermo Scientific	13-255-25	
Dulbecco's MEM (DMEM)	Hyclone	SH30243.01	
Cosmic calf serum	Hyclone	SH3008703	
Penicillin/streptomycin	Hyclone	SV30010	
Serum-free medium for transfection (OPTI-MEM I)	Invitrogen	31985	Used with Lipofectamine 2000
Poly-L-Lysine solution	Sigma	P4707	
25 mm circular glass cover slips	Thermo Scientific	12-545-102	In case VC-MPC-TW is used
Lipofectamine 2000	Invitrogen	11668027	Other transfection reagents can also be used.

Solution A (Hank's buffer)			9.7 g HANK salt (Sigma H1387), 0.35 g NaHCO ₃ , 5.96 g HEPES to 1 L, pH adjusted to 7.35 with NaOH
Solution B			Solution A + 0.04 mM Gln
Solution C			Solution A + 0.2 mM Gln
Solution D			Solution A + 1 mM Gln
Solution E			Solution A + 5 mM Gln
Solution F			Solution A + 5 mM Ala