

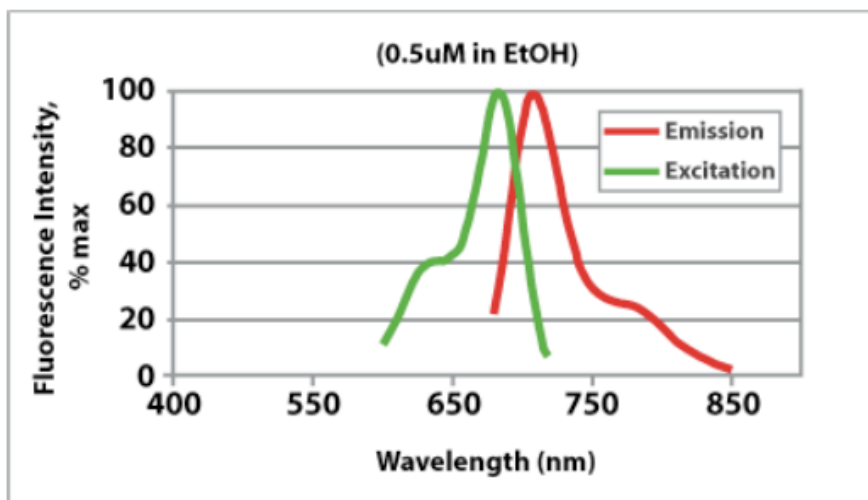


Catalog Number: FS-1005

Product Name: NeuroVue® Burgundy Filter Square For Neuronal Tract Tracing

Product Description: 1 cm² nylon filter coated with the lipophilic far-red emitting dye, NeuroVue Burgundy.
Typical dye loading: 11-14nmoles/mm²

Figure 1: Spectra of NeuroVue Burgundy. (ex max = 683nm; em max = 707nm)



Storage/Stability: Store in the dark at room temperature.

Applications: NeuroVue Burgundy has been found to be useful for tracing neuronal connections in animal tissues fixed in formaldehyde (personal communication, Dr Bernd Fritsch, Creighton University). Like other lipophilic tracers (1, 2), it readily transfers into plasma membranes in fixed and/or live tissues and diffuses laterally within the membrane, eventually labeling the entire cell body as well as the finest axonal and dendritic branches, and allowing visualization of neuronal processes up to several millimeters distant from the point of dye insertion. Studies of up to 7 days can be performed in most cases without substantial transcellular diffusion.

NeuroVue Burgundy is provided in coated filter format because insertion of small dye coated filter segments has been shown to be a simple, reliable method for labeling well defined tissue regions, avoiding known artifacts associated with labeling via high pressure microinjection or insertion of dye crystals on a dissecting needle (1, 3, 4). NeuroVue Burgundy fluoresces in the far red (Figure 1) and exhibits minimal bleed through into filter windows typically used for visible fluorescing lipophilic tracers such as DiA, DiI, NeuroVue Red (cat. # FS-1002), NeuroVue Orange (cat. # FS-1003) or NeuroVue Emerald (catalog No. FS 1004), making it an excellent choice for multicolor neurotracing studies in sections and/or whole-mount preparations. NeuroVue Burgundy can also be used in combination with NeuroVue Maroon using spectral unmixing techniques.

Additional Important Information

- 1) Filter segments of the desired size and shape can be cut using super fine Vannas scissors (one possible supplier is World Precision Instruments, Sarasota, FL, cat #500086) and inserted into the tissue at the site to be labeled. Protocol NT001 can be downloaded for further details
- 2) Diffusion times vary depending on the biological system under study and must be determined empirically. See cited references and protocol NT001 for potentially important variables and possible starting conditions.
- 3) Detection of Labeled Cells
Note: Due to its very long red fluorescence emission, most people cannot see NeuroVue Burgundy emission by eye. Detection by camera will be more sensitive than with the unaided eye
 - (a) Confocal microscopy.
Detection is most efficient using the 633nm or 647nm laser line for excitation and emission filter set at 650-710nm.
 - (b) Epifluorescence microscopy:
Standard filter sets potentially useful for NeuroVue Burgundy excitation and emission include
 - Cy5[®] (Chroma # 31023): exciter D640/20x , dichroic 660DCLP, emitter D680/30
 - Cy5[®] longpass emission (Chroma #41024), exciter HQ620/60x , dichroic Q660LP, emitter HQ665LP

References:

1. Honig M. 1993 Dil Labelling. **Neuroscience Protocols** 93-050-16-01-20
2. Köbbert C, Apps R, Bechmann I, Lanciego JL, Mey J, Thanos S. 2000. Current concepts of neuroanatomical tracing. **Progress in Neurobiology** 62: 327-351
3. Fritzsche B, Nichols DH, Echelard Y, McMahon AP. Development of midbrain and anterior hindbrain ocular motoneurons in normal and Wnt-1 knockout mice, **J Neurobiol.** 27:457-469 (1995).
4. Rosa-Molinar E, Proskocil BJ, Ettl M and Fritzsche B. Whole-mount procedures for simultaneous visualization of nerves, neurons, cartilage and bone. **Brain Res. Protoc.** 4, 115-123 (1999).

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