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NeuroVue® Jade Filter Square For Neuronal Tract Tracing

Catalog #24837

Product Description

1 cm^2 nylon filter coated with the lipophilic green emitting dye, NeuroVue® Jade. Typical dye loading: 11-14nmoles/mm^2.

Figure 1
Spectra of NeuroVue® Jade.
(ex max=478nm; em max =508nm)

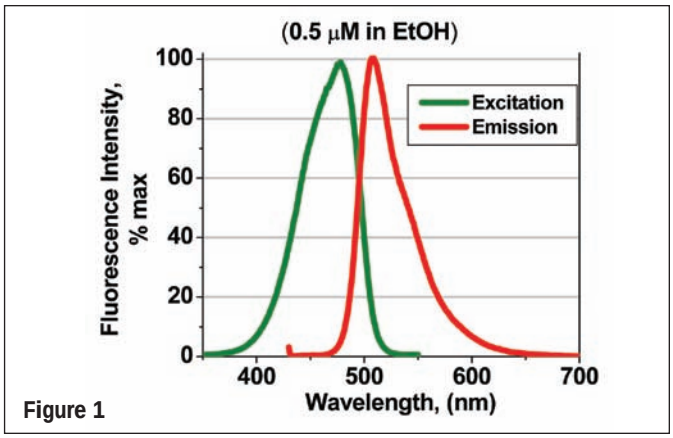

Figure 1

Storage/Stability

Store in the dark at room temperature.

Applications

NeuroVue® Jade is an analog of NeuroVues Emerald and Green (1, 2, Technical Data Sheet #770) with optimized diffusion properties for studies in formaldehyde fixed small embryos for at least 5 days (4). For these types of studies in fixed tissue, NeuroVue® Jade can be applied simultaneously in combination with NeuroVue® Maroon, NeuroVue® Red and/or NeuroVue® Orange to provide 3-4 color tracing of neuronal connections *(personal communication, B. Fritzsch, Creighton University)*. Like other lipophilic tracers (3, 5), it readily transfers into plasma membranes in fixed 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 (1, 2, 4).

NeuroVue® Jade 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 (3,6, 7). NeuroVue® Jade fluoresces in the green region of the spectrum (**Figure 1**) and exhibits minimal bleed through into filter windows typically used for the visible fluorescing lipophilic tracers, DiI, NeuroVue® Red (Cat. #24835), NeuroVue® Orange (Cat. #24836) and also the far red fluorescing NeuroVue® Maroon (Cat. #24834) and NeuroVue® Burgundy (Cat. #24838), making it an excellent choice for multicolor neurotracing studies in sections and/or whole-mount preparations (1, 2, 4) for periods of at least 5 days.

Additional Important Information

1. Filter segments of the desired size and shape can be cut using super fine Vannas scissors (Cat. #24839) and inserted into the tissue at the site to be labeled. Technical Data Sheet #770 may be downloaded for an in depth protocol.

2. Diffusion times vary depending on the biological system under study and must be determined empirically. See cited references and Technical Data Sheet #770 for potentially important variables and possible starting conditions.

3. Detection of Labeled Cells
   a) Confocal microscopy: Detection is most efficient using the 488nm laser line for excitation and emission filter set at 500-530nm.

   b) Epifluorescence microscopy:
   Standard filter sets potentially useful for NeuroVue® Jade excitation and emission include:
   - Cat. #24792 - Alpha Vivid Filter Set XF100-2 (FITC). Exciter 475AF40, Dichroic 505DRLP, Emitter 535AF45

References

1. Fritzsch B, Muirhead KA , Feng F , Gray BD, Ohlsson-Wilhelm BM. 2005. Diffusion and Imaging Properties of three new lipophilic tracers, NeuroVue® Maroon, NeuroVue® Red and NeuroVue® Jade and their use for double and triple labeling of neuronal profile. **Brain Res Bull.**, 66, 3, 249-258

2. Fritzsch B, Jackson Lab Presentation, 2005: http://www.biomedsci.creighton.edu/facilities/nccb/media/Jackson_lab_presentation.ppt NeuroVue® Jade (previously PTIR281);NeuroVue® Red (previously PTIR278); NeuroVue® Maroon (previously PTIR271)

3. Honig M. 1993 DiI Labelling. **Neuroscience Protocols** 93-050-16-01-20 .

4. Jensen-Smith H, Gray B, Muirhead K, Ohlsson-Wilhelm B, Fritzsch B. 2007. Long distance threecolor neuronal tracing in fixed tissue using NeuroVue® dyes. **Immunol. Invest.**, 36, No 5-6, 763.

5. Köbbert C, Apps R, Bechmann I, Lanciego JL, Mey J,Thanos S. 2000. Current concepts of neuroanatomical tracing. **Progress in Neurobiology** 62: 327-351.

6. Fritzsch, B, Nichols DH, Echelard Y, McMahon AP. 1995. Development of midbrain and anterior hindbrain ocular motoneurons in normal and Wnt-1 knockout mice, **J Neurobiol.** 27:457-469.

7. Rosa-Molinar E, Proskocil BJ, Ettel M and Fritzsch B. 1999. Whole-mount procedures for simultaneous visualization of nerves, neurons, cartilage and bone. **Brain Res. Protoc.** 4, 115-123.

Ordering Information

Cat. #	Description	Size
24837	NeuroVue® Jade Filter Square For Neuronal Tract Tracing	1 Pk

Additional Products

24834	NeuroVue® Maroon Filter Square For Neuronal Tract Tracing	1 filter
24835	NeuroVue® Red Filter Square For Neuronal Tract Tracing	1 filter
24836	NeuroVue® Orange Filter Square For Neuronal Tract Tracing	1 filter
24838	NeuroVue® Burgundy Filter Square For Neuronal Tract Tracing	1 filter
24839	Vannas scissors, super fine	1 pair

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