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Chemistry beyond the ordinary

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NeuroVue® Red Filter Square For Neuronal Tract Tracing

Catalog #24835

Product Description

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

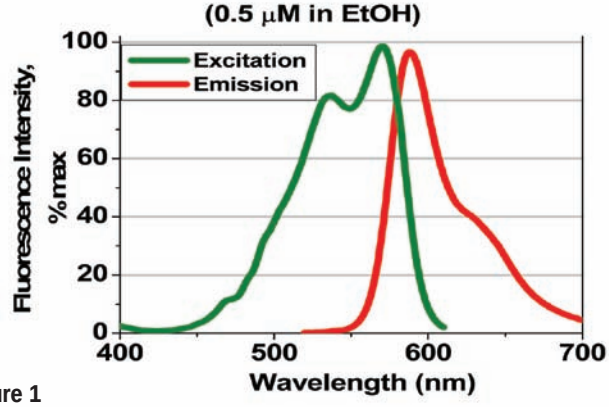

Figure 1

Figure 1
Spectra of NeuroVue® Red.
(ex max=567nm; em max=588nm)

Storage/Stability

Store in the dark at room temperature.

Applications

NeuroVue® Red has been found to be useful for tracing neuronal connections in animal tissues fixed in formaldehyde (1, 3-6, 8, 9,11, 13, 14). Like other lipophilic tracers (7, 10), 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 (1, 3-6, 8, 9, 11, 13, 14).

NeuroVue® Red 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 (2, 7, 12). NeuroVue® Red fluoresces in the red (**Figure 1**) and exhibits minimal bleed through into filter windows typically used for green fluorescing lipophilic tracers such as NeuroVue® Jade (Cat. #24837) and far red fluorescing lipophilic tracers such as NeuroVue® Maroon (Cat. #24834) or NeuroVue® Burgundy (Cat. #24838), making it an excellent choice for multi-color neural tracing studies in sections and/or whole mount preparations (1, 3-6, 8, 9,11, 13, 14). In addition, NeuroVue® Red can be used in combination with NeuroVue® Orange (Cat. #24836) if spectral unmixing techniques are employed.

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 543nm or 568nm laser line for excitation and emission filter set at 565-615nm.

   b) Epifluorescence microscopy
   Standard filter sets potentially useful for NeuroVue® Red excitation and emission include:
   - Chroma 41034 : Rhodamine X (or Alexa Fluor 568T) Exciter HQ570/20x , Dichroic Q585LP, Emitter HQ620/60m
   - Chroma 31002 : TRITC (Rhodamine)/DiI/Cy3®, Exciter D540/25x , Dichroic 565DCLP, Emitter D605/55m
   - Chroma 41002 : TRITC (Rhodamine)/DiI, Exciter HQ535/50x , Dichroic Q565LP Emitter HQ610/75m

References

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3. 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 Green and their use for double and triple labeling of neuronal profile. Brain Res Bull 66:249-258. NeuroVue Maroon, NeuroVue Red, NeuroVue Green
4. Fritzsch B, Matei VA, Nichols DH, Bermingham N, Jones K, Beisel KW, Wang VY. 2005. Atoh1 null mutants show directed afferent fiber growth to undifferentiated ear sensory epithelia followed by incomplete fiber retention. Dev Dyn, 233: 570-583. NeuroVue Maroon (previously PTIR271), NeuroVue Red (previously PTIR278)
5. Fritzsch B, Jackson Lab Presentation, 2005: http://www.biomedsci.creighton.edu/facilities/nccb/media/Jackson_lab_presentation.ppt NeuroVue Green (previously PTIR281);NeuroVue Red (previously PTIR278);NeuroVue Maroon (previously PTIR271)
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7. Honig M. DiI Labelling. 1993. Neuroscience Protocols 93-050-16-01-20
8. Hsieh CY, Cramer KS. 2006. Deafferentation Induces Novel Axonal Projections in the Auditory Brainstem After Hearing Onset. J Comp Neurol 497: 589-599 NeuroVue Red was used for all figures except Figure 2D, for which both NeuroVue Red and DiI were used, and Figure 5A, for which DiI was used (K. Cramer, personal communication).
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14. Zou D, Silvius D, Fritzsch B, Xu PX. 2004. Eya1 and Six1 are essential for early steps of sensory neurogenesis in mammalian cranial placodes. Development 131:5561-5572. NeuroVue Maroon (previously PTIR271) and NeuroVue Red (previously PTIR278) were used for Figure 6, panels G-R (B. Fritzsch, personal communication).

Ordering Information

Cat. #	Description	Size
24835	NeuroVue® Red Filter Square For Neuronal Tract Tracing	1 filter

Additional Products

24834	NeuroVue® Maroon Filter Square For Neuronal Tract Tracing	1 filter
24836	NeuroVue® Orange Filter Square For Neuronal Tract Tracing	1 filter
24837	NeuroVue® Jade 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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