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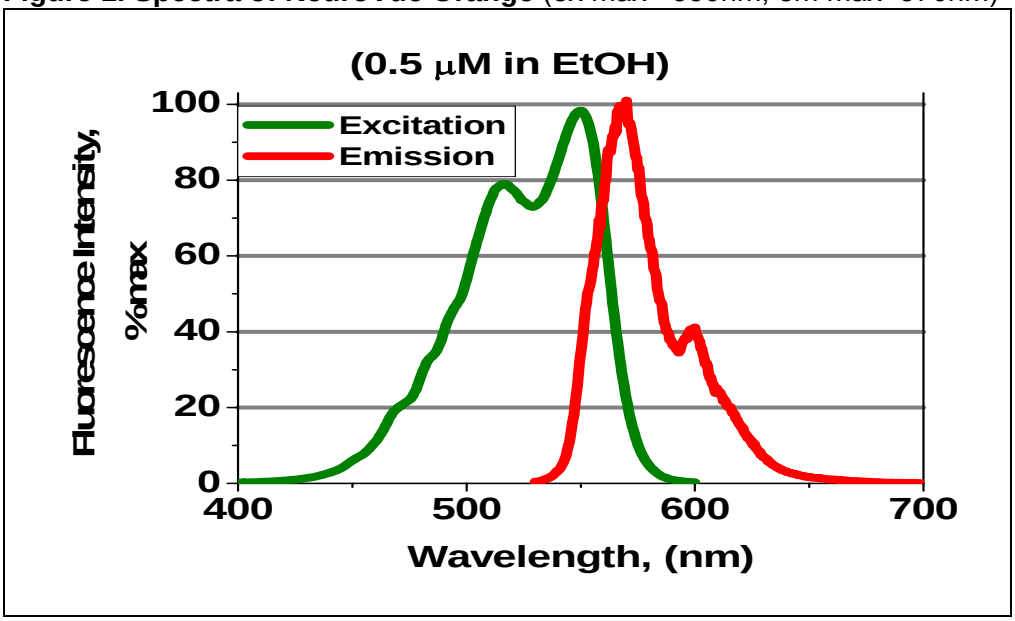
Catalog Number: FS-1003

Product Name: NeuroVue® Orange For Neuronal Tract Tracing Applications

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

Figure 1. Spectra of NeuroVue Orange (ex max =550nm; em max=570nm)



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

Applications:
NeuroVue Orange has been found to be useful for tracing neuronal connections in animal tissues fixed in formaldehyde (personal communication, Dr Bernd Fritzsch, 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 3-4 weeks can be performed in most cases without substantial transcellular diffusion.

NeuroVue Orange 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 Orange fluoresces in the red (Figure 1) and exhibits minimal bleed through into filter windows typically used for far red fluorescing lipophilic tracers such as NeuroVue Maroon (Cat. # FS-1001) and NeuroVue Burgundy (cat # FS-1005), and green fluorescing lipophilic tracers such as NeuroVue Jade (cat #

FS-1006) making it an excellent choice for multi-color neural tracing studies in sections and/or whole mount preparations (4). NeuroVue Orange can also be used in combination with NeuroVue Red 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

a) Confocal microscopy.

Detection is most efficient using the 543nm laser line for excitation and emission filter set at 565-615nm.

b) Epifluorescence microscopy.:

Standard filter sets potentially useful for NeuroVue Orange excitation and emission include:

- Chroma 31002 : TRITC (Rhodamine)/DiI/Cy3 ®. Exciter D540, Dichroic 565DCLP, Emitter D605/55m
- Chroma 41002 : TRITC (Rhodamine)/DiI/Cy3 ®. Exciter HQ535/50x, Dichroic Q565LP, Emitter HQ610/75m

References:

1. Honig M. 1993 DiI 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. 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.
4. 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.