

## Fluorescent Probes for D<sub>1</sub> and D<sub>2</sub> Dopaminergic Receptors

### Quick Facts

#### Storage upon receipt:

- -20°C
- Desiccate
- Protect from light
- Avoid repeated freezing and thawing
- Avoid storing in very acidic or basic solutions

Table 1. Spectral characteristics of antagonist and agonist conjugates.

Cat #	Product	MW	Ex* (nm)	Em* (nm)
B-3420	BODIPY® FL SCH23390	577	503	511
T-3427	Texas Red® NAPS	1103	582	600
B-3460	BODIPY FL PPHT	599	504	511

\* Approximate fluorescence excitation (Ex) and emission (Em) conjugates.

### Introduction

Molecular Probes offers several probes specific for the D<sub>1</sub> and D<sub>2</sub> dopaminergic receptors, including fluorescent derivatives of the D<sub>1</sub> antagonist SCH 23390, the D<sub>2</sub> antagonist NAPS and the D<sub>2</sub> agonist PPHT (2-(*N*-phenethyl-*N*-propyl)amino-5-hydroxy-tetralin). These probes retain their high affinity and selectivity for the corresponding receptor, thus allowing the direct visualization and localization of the D<sub>1</sub> and D<sub>2</sub> dopaminergic receptors.<sup>1-3</sup> For instance, BODIPY® and Texas Red® NAPS derivatives have been used to characterize the distribution of D<sub>2</sub> receptors in the retina of two different amphibian species.<sup>4</sup> The range of emission maxima available make it possible to simultaneously label and distinguish receptor subtypes in a single neuron.

### Materials

#### Contents

The SCH 23390 and NAPS conjugates are supplied as lyophilized powder in units of 1 mg. BODIPY FL PPHT (B-3460) is supplied as lyophilized powder in a unit size of 200 µg.

#### Storage and Handling

Stock solutions can be made in high-quality DMSO; these conjugates are somewhat less soluble in methanol or ethanol.

### References

1. J Neurochem 52, 1641 (1989);
2. Brain Res 547, 199 (1991);
3. Brain Res 547, 208 (1991);
4. J Comp Neurol 331, 149 (1993).

Undiluted material and stock solutions may be stored desiccated at -20°C for at least three months. These probes, especially the BODIPY conjugates, should not be stored in very acidic or basic solutions. PROTECT FROM LIGHT. AVOID REPEATED FREEZING AND THAWING.

### Application

Because labeling protocols vary with application, the appropriate concentration of antagonist or agonist should be determined empirically. Typically, a 2 mM stock solution in DMSO is diluted into the cell loading buffer to yield a final probe concentration of about 2 µM and 0.1% DMSO. Suitable control experiments must be performed to make certain that the DMSO does not alter the membrane properties of the cell.

### Properties

Peak excitation and emission wavelengths and molecular weights (MW) for the antagonist and agonist conjugates are listed in Table 1.

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**Product Summary** *Current prices may be obtained from our Web site or from our Customer Service Department.*

Cat #	Product Name	Unit Size
B-3460	BODIPY® FL PPHT .....	200 µg
B-3420	BODIPY® FL SCH 23390 .....	1 mg
T-3427	Texas Red® NAPS .....	1 mg

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**Contact Information**

Further information on Molecular Probes' products, including product bibliographies, is available from your local distributor or directly from Molecular Probes. Customers in Europe, Africa and the Middle East should contact our office in Leiden, the Netherlands. All others should contact our Technical Assistance Department in Eugene, Oregon.

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