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## DusQ® 2 phosphoramidite

http://www.lumiprobe.com/p/bhq2-amidite

DusQ® 2 phosphoramidite is suitable for the synthesis of oligonucleotides labeled with DusQ 2 quencher at the 5′- and 3′-ends, as well as in the middle of the sequence. This phosphoramidite has DMT protection, which allows purification of the synthesized 5′-labeled oligonucleotide on cartridges.

This phosphoramidite is commonly used for the synthesis of doubly labeled probes for quantitative PCR with DusQ 2 quencher at the 5′-end. DusQ 2 is a fluorescence quencher with maximum absorption in the range of 560–670 nm and is suitable for efficient quenching of fluorophores emitting in this range through FRET mechanism. It is also used in hybridization probes based on static and mixed quenching.

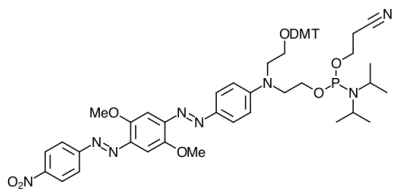
Since the quenching efficiency of DusQ 2 is minimally dependent on the spectral overlap between the fluorophore and the quencher, it is suitable for a wide range of fluorophores, including those with emission in the red and far-red ranges. The list of fluorophores for use with DusQ 2 includes, but is not limited to, Cyanine3, TAMRA, ROX, Cyanine3.5, Cyanine5, Cyanine5.5.

# Usage

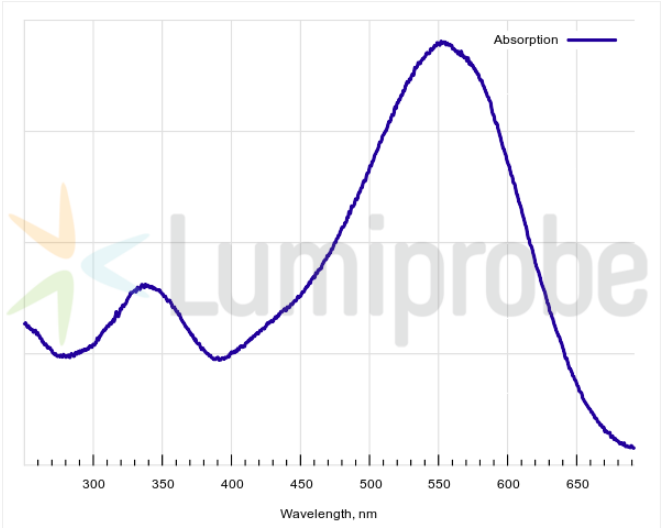
Coupling: 6 minutes coupling time recommended.

Deprotection: for 2 h at RT using ammonium hydroxide, or 10 min at 65 °C with AMA (solution of 30% ammonium hydroxide/40% aqueous methylamine 1:1 v/v).

Deprotection time depends on oligonucleotide composition and nucleobase protecting groups, and additional modifications.




**Structure of DusQ 2 phosphoramidite**




**Absorption spectrum of DusQ 2**

**General properties**

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|---|---|
| Appearance: | dark colored solid |
| Molecular weight: | 997.08 |
| CAS number: | 374591-98-7 |
| Molecular formula: | $C_{54}H_{61}N_8O_9P$ |
| Quality control: | NMR $^{1}H$, $^{31}P$, HPLC-MS (95%) |
| Storage conditions: | 12 months after receival at -20°C in the dark. Transportation: at room temperature for up to 3 weeks. Avoid prolonged exposure to light. Desiccate. |

| | |
|---|---|
| Legal statement: | This Product is offered and sold for research purposes only. It has not been tested for safety and efficacy in food, drug, medical device, cosmetic, commercial or any other use. Supply does not express or imply authorization to use for any other purpose, including, without limitation, in vitro diagnostic purposes, in the manufacture of food or pharmaceutical products, in medical devices or in cosmetic products. |

**Spectral properties**

| | |
|---|---|
| Excitation/absorption maximum, nm: | 552 |
| $CF_{260}$: | 0.31 |
| $CF_{280}$: | 0.26 |

**Oligo synthesis details**

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|---|---|
| Diluent: | 20% THF / acetonitrile |
| Coupling conditions: | 6 min coupling time; 3 min oxidation time |
| Cleavage conditions: | ammonia, 2 h at room temperature |
| Deprotection conditions: | identical to protected nucleobases |