

R6G phosphoramidite, 6-isomer

<http://www.lumiprobe.com/p/6-r6g-phosphoramidite>

R6G phosphoramidite for oligonucleotide synthesis, pure 6-isomer.

R6G (rhodamine 6G) is a xanthene dye of the rhodamine family with high fluorescence quantum yield and high molar extinction coefficient. Relative to those of fluorescein, the absorption (518 nm) and emission (542 nm) maxima of 6-R6G are shifted into the long-wave region.

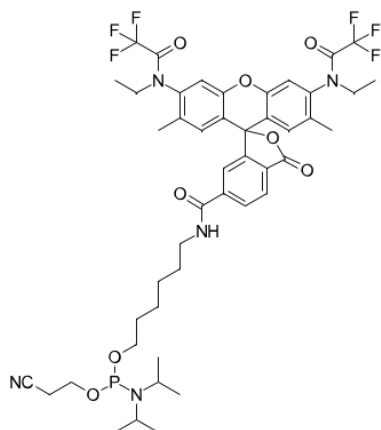
R6G can be used as a FRET acceptor in DNA-sequencing and in short tandem repeat (STR) analysis. The dye is commonly used for producing TaqMan probes for quantitative PCR. In comparison with HEX and JOE dyes, R6G in combination with BHQ1 quencher has stronger quenching in molecular beacon probes, significantly reducing background fluorescence in PCR.

Usage:

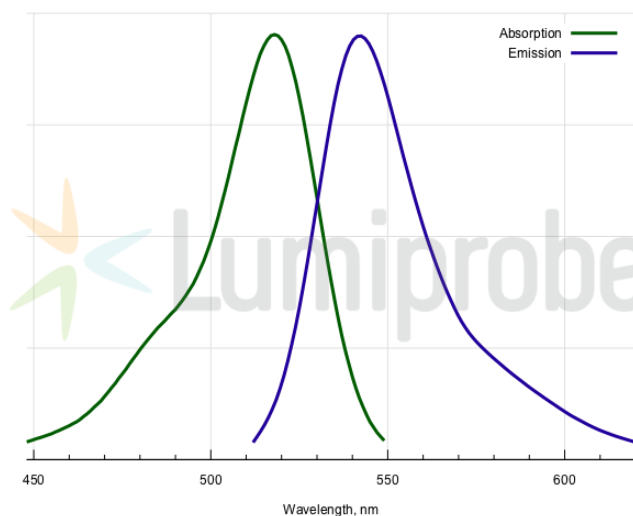
Coupling: 10 minutes.

Deprotection: solution of tert-Butylamine in water (1:3 v/v) overnight at 55°C.

Aqueous ammonia and AMA (solution of 30% ammonium hydroxide/40% aqueous methylamine 1:1 v/v) must NOT be used for deprotection of the modified oligonucleotide from the solid-phase support because of complete and irreversible R6G degradation.



Structure of R6G Phosphoramidite



Absorption and emission spectra of 6-R6G

General properties

Appearance:	yellowish powder
Molecular weight:	949.93
CAS number:	1355330-47-0
Molecular formula:	C ₄₆ H ₅₄ F ₆ N ₅ O ₈ P
Solubility:	good in DCM, acetonitrile
Quality control:	NMR ¹ H and ³¹ P, HPLC-MS (95+%), isomeric purity > 97%
Storage conditions:	Storage: 12 months after receipt at -20°C in the dark. Transportation: at room temperature for up to 2 weeks. Avoid prolonged exposure to light. Desiccate.

Spectral properties

Excitation/absorption maximum, nm: 518

ϵ , L·mol ⁻¹ ·cm ⁻¹ :	116000
Emission maximum, nm:	542
Fluorescence quantum yield:	0.95
CF ₂₆₀ :	0.18
CF ₂₈₀ :	0.17

Oligo synthesis details

Diluent: acetonitrile