

Fluorophore and BHQ selection chart



Fluorophore	Alternate dyes	DYE-5' - T ₀		Recommended quencher	BHQ dye quenching range
		Excitation	Emission		
● Biosearch Blue™		352	447	BHQ-1	BHQ-0 430-520 nm
FAM		495	520	BHQ-1	
TET		521	536	BHQ-1	
● CAL Fluor® Gold 540	VIC/TET/JOE	522	544	BHQ-1	BHQ-1 480-580 nm
JOE		529	555	BHQ-1	
VIC	Ex 538/Em 554	538	554		
HEX		535	556	BHQ-1	
● CAL Fluor Orange 560	VIC/HEX/JOE	538	559	BHQ-1	
● Quasar® 570	CY3	548	566	BHQ-2	
CY™3	CY3 em 549/ex 566	549	566		
NED	Ned em 546/ex 575	546	575		
TAMRA		557	583	BHQ-2	BHQ-2* 559-670 nm
● CAL Fluor Red 590	TAMRA	569	591	BHQ-2	
Cy 3.5	Cy3.5 em 581/ex 596	581	596		
ROX™		586	610	BHQ-2	
● CAL Fluor Red 610	TEXAS RED/ROX/ALEXA FLUOR® 594	590	610	BHQ-2	
Texas Red®		597	616		
● CAL Fluor Red 635	LC RED® 640	618	637	BHQ-2	
● Pulsar® 650		460	650	BHQ-2	
Cy 5		646	669		
● Quasar 670	CY5	647	670	BHQ-2*, BHQ-3	BHQ-3 620-730 nm
Cy 5.5		675	694		
● Quasar 705	CY5.5	690	705	BHQ-2*, BHQ-3	

Key to the selection chart:

- Indicates LGC, Biosearch Technologies' proprietary dyes.
- Dyes in **BOLDFACE** are available as modifications for labeled oligos.
- Fluorophores in **BLUE** are available for Stellaris® RNA FISH. Note: Stellaris probes are single-labeled fluorophore probes that do not require a quencher

*BHQ-2 dye is recommended for **Quasar 670** and **Quasar 705 fluorophores** due to static quenching.

Many dyes are available as synthesis reagents and all fluorophores and BHQ dyes are available as customisable oligos for a range of applications.

Please visit our website for a complete listing of our available products.



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GENOMIC ANALYSIS BY LGC

Instrument and dye selection guide for multiplexing dual-labeled BHQ Probes and oligos



Instrument	Company	Calibration required?	Dye 1	Dye 2	Dye 3	Dye 4	Dye 5
MX3000P	Agilent	No	FAM	CAL Fluor Orange 560	CAL Fluor Red 610	Quasar 670	
MX4000	Agilent	No	FAM	CAL Fluor Orange 560	CAL Fluor Red 610	Quasar 670	
CFX96 Touch™	Bio-Rad Laboratories	Yes	FAM	CAL Fluor Gold 540	CAL Fluor Red 610	Quasar 670	Quasar 705
iCycler iQ™	Bio-Rad Laboratories	Yes	FAM	CAL Fluor Orange 560	CAL Fluor Red 610	Quasar 670	
SmartCycler®	Danaher Corp. (Cepheid)	Yes	FAM	CAL Fluor Orange 560	CAL Fluor Red 635	CAL Fluor Red 635	
SmartCycler II	Danaher Corp. (Cepheid)	Yes	FAM	CAL Fluor Orange 560	CAL Fluor Red 610	Quasar 670	
IntelliQube®	Biosearch Technologies	Yes	FAM	CAL Fluor Orange 560	TAMRA	SuperROX®	Quasar 670
Mastercycler® ep realplex	Rotor-Gene Q 2plex	Yes	FAM	CAL Fluor Gold 540			
Eco™	Illumina	Yes	FAM	CAL Fluor Orange 560	CAL Fluor Red 610	Quasar 670	
Nexar®	Biosearch Technologies	No	FAM	HEX	CAL Fluor Red 610		
Rotor-Gene Q 2plex	Qiagen	No	FAM	CAL Fluor Orange 560			
Rotor-Gene Q 5plex	Qiagen	No	FAM	CAL Fluor Orange 560	CAL Fluor Red 610	Quasar 670	Quasar 705
cobas® z 480	Roche	Yes	FAM	CAL Fluor Orange 560	CAL Fluor Red 610	Quasar 670	
LightCycler® 1.2	Roche	Yes	FAM	Pulsar® 650			
LightCycler 2.0	Roche	Yes	FAM	CAL Fluor Red 610	Pulsar 650		
LightCycler 96	Roche	Yes	FAM	CAL Fluor Orange 560	CAL Fluor Red 610	Quasar 670	
LightCycler 480	Roche	Yes	FAM	CAL Fluor Orange 560	CAL Fluor Red 610	Quasar 670	
ABI PRISM® 7000	Thermo Fisher Scientific	Yes	FAM	CAL Fluor Gold 540	SuperROX™		
ABI 7300	Thermo Fisher Scientific	Yes	FAM	CAL Fluor Gold 540	SuperROX		
ABI 7500/7500 Fast	Thermo Fisher Scientific	Yes	FAM	CAL Fluor Orange 560	TAMRA	SuperROX	Quasar 670
ABI PRISM 7700	Thermo Fisher Scientific	Yes	FAM	CAL Fluor Gold 540	SuperROX		
ABI 7900HT	Thermo Fisher Scientific	Yes	FAM	CAL Fluor Gold 540	SuperROX		
QuantStudio®	Thermo Fisher Scientific	Yes	FAM	CAL Fluor Gold 560	SuperROX	Quasar 670	Quasar 705
StepOne™	Thermo Fisher Scientific	Yes	FAM	CAL Fluor Gold 540			
StepOnePlus™	Thermo Fisher Scientific	Yes	FAM	CAL Fluor Gold 540	TAMRA		
ViiA™ 7	Thermo Fisher Scientific	Yes	FAM	CAL Fluor Orange 560	SuperROX	Quasar 670	Quasar 705

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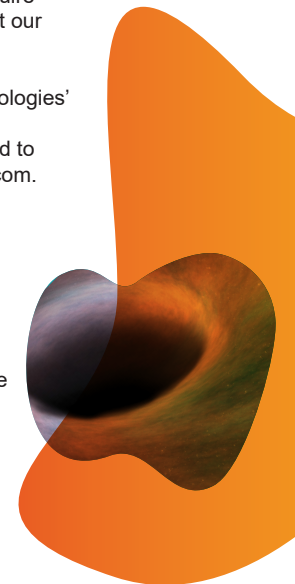
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These dye recommendations apply to Biosearch Technologies' dual-labeled BHQ Probes and may not apply to other probe formats. Some instruments may require fluorescence calibration. Please visit our website for more information.

*SuperROX dye is Biosearch Technologies' proprietary passive reference dye. For more tools and resources related to PCR/qPCR, visit: www.qpcrdesign.com.

Determined through research at Biosearch Technologies or a collaborator.

Predicted based on instrument specifications. Recommendations have not been proven and should be used cautiously on an experimental basis.



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