



Oligonucleotides - articles

Alternative dyes for oligonucleotides/probes labeling

Why choose alternative dyes instead of „genuine“ dyes? First, they are cheaper, and second, they can give the same results. Another reason is that the number of suppliers who can provide modified oligonucleotides is restricted – only a patent or a licence owner is usually allowed to produce them.

Oligonucleotides/probes labelled with fluorescent dyes are widely used in a considerable number of different types of methods, like qPCR, genotyping, hybridization, sequencing, FISH, and others. These methods require a wide range of various fluorescent dyes. Some fluorescent dyes (alternative dyes) can be used as an excellent replacement for other fluorescent dyes (classical/typical dyes). An overview of the most widely used replacement dyes is presented in Table 1 below.

Florescent dye	Alternative/Possible substitution				Emission
FAM	ATTO 465	Alexa 488	Cy2	Oregon Green	green
TET	ATTO 520	CAL Fluor Gold 540			
NED	ATTO 550	Cy3			yellow
TET	ATTO 520				
JOE, HEX	ATTO 532	Alexa 532	CAL Fluor Orange 560	Bodipy 530/550	
VIC	ATTO 532	CAL Fluor 560	Yakima Yellow		
PET	ATTO 565	Cy3.5	Alexa Fluor 594	ROX	orange
LC 610	Texas Red	CAL Fluor Red 610	ROX		
TAMRA	CAL FLUOR Red 590				
LC 640	CAL FLUOR Red 635				
LIZ	ATTO 633				
Cy5	ATTO 647N	ATTO 655	LC 670		red
Cy5.5	LC 705	ATTO 680	ATTO 700		

Note: Users should always check if the substitute dye is suitable for their needs and if it is compatible with the method used. Products shown in the table may have a trademark or a patent associated with them.

If you decide to choose an alternative dye, please keep in mind that choosing an alternative dye is subject to the same conditions and rules as choosing a typical dye. The most important conditions include:

- Absorption and emission spectra of the selected dye
- pH stability of the dye
- Photostability of the dye, fluorescence yield etc.

It is also necessary to consider the method and properties of the instrument to be used when choosing the correct alternative dyes, for example, the range of excitation source and range of detector of the instrument, etc.

More info on website:

www.generi-biotech.com/categories/life-sciences-en/pcr-reverse-transcription-master-mixes

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