

Chromophores & Ligands

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ChemGenes offers a variety of chromophores and ligands for developing modified synthetic oligonucleotides conjugated with reporter molecules which can be employed in hybridization-based assays. Such oligonucleotides have broad applications in both basic molecular biology research and in clinical diagnostics and screening, because they have high specificity to a target nucleic acid sequence.

Ligands for attachment Chemistries:

A wide variety of ligands are available from ChemGenes. The most common modification used for selective oligonucleotide attachment is the alkyl amino group. We offer from C-3 to C-12 spacer amino modifiers. This modification can be introduced into an oligonucleotide by using the corresponding phosphoramidite building block with the protected alkyl amine, which enabled for the reaction with activated esters after removal of the protecting group.^{1,2}

Amongst various other chemistries available in literature by different approaches such as introduction of the desired alkyl amino function by aminolysis of the ester bond by diamino alkanes.^{3,4} The reaction of alkyl amino modified oligonucleotides and activated esters affords the amide covalent bond between an oligonucleotide and molecule of interest. Similarly hydrazides have been used in selective reaction with active esters. That type of nucleophilic modifications attached to the oligonucleotides and some of their applications have been recently reported in the literature.^{5,6} It also has been shown that hydrazide forms a stable Schiff base in the reaction with aldehydes and for some applications does not require reduction into stable alkyl hydrazide by cyanoborohydride.⁷

Sulfhydryl modification reagents and supports are offered by us. This is a very efficient functionality utilized in the Michael-addition and nucleophilic substitution reactions with different electrophiles. It was successfully employed in chemoselective bio-molecule conjugations.^{8,9} That modification can be introduced by several thioate and disulfide containing phosphoramidites and solid supports sold by us.

- Quenchers
- Phosphate Generating Reagents
- Lipophilic Amidites
- Biotin Amidites and Supports
- Amino Modifiers
- Spacer Amidites
- Thiol Modifier Amidites and Supports
- Cholesterol Amidites and Supports
- 3'-Carboxyl Linker Amidites
- Branching Amidites & 3'-Spacer Supports
- Fluorescein Amidites and Supports
- TAMRA and ROX
- Dabcyl Amidites and Supports
- Psoralen Amidites and Supports
- Etheno DNA Amidites and Supports
- Etheno RNA Amidites and Supports
- DNP-TEG Amidites and Supports