

RNA

FISH

PNA

Antisense
Oligos

siRNA

Aptamers

XXL
Large Scale

qPCR

DNA

peptide
oligo
conjugate

BIOMERS.NET
OLIGONUCLEOTIDES
FOR YOUR RESEARCH



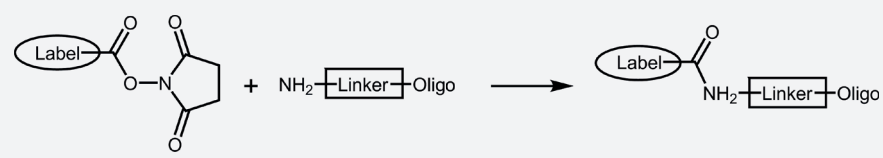


covalent coupling

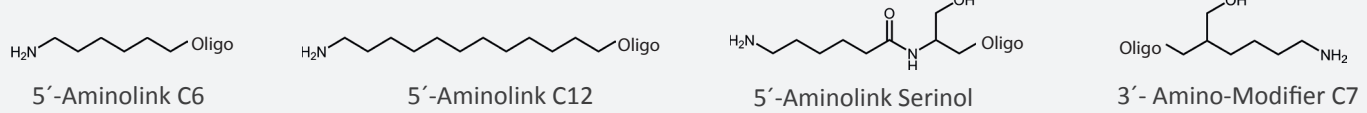
immobilisation on surfaces

Reactive linkers on oligonucleotides

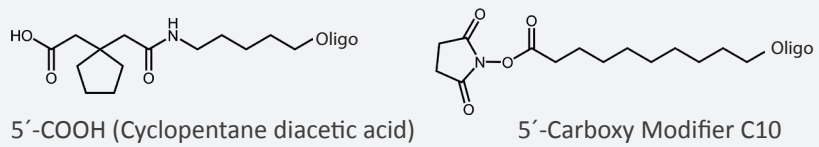
Amino - Carboxy



By forming an amide bond, the **amino group (NH₂)** can bind further molecules (dyes, proteins, etc.). For this purpose, several linkers are available.

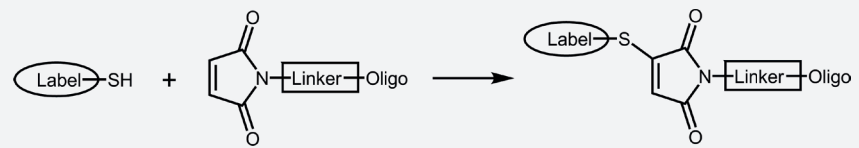


Further interesting linkers for attachment to oligos are **carboxy linkers** with terminal carboxyl group for coupling of dyes, quenchers or haptens.

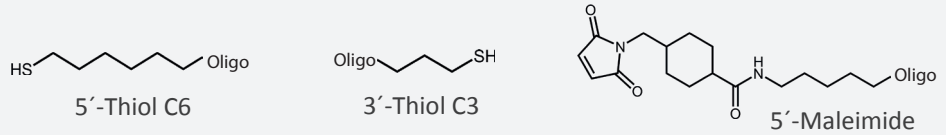


Due to the reduced stability of the deprotected form, the **Carboxy Modifier C10** is only available on solid support for further modifications.

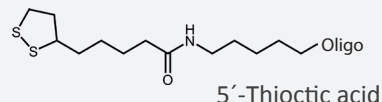
Thiol - Maleimide



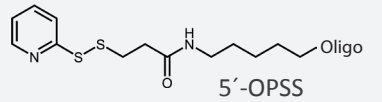
The terminal, reactive SH group of **thiol linkers** easily reacts with **maleimides** to form covalent bonds between the molecules.



For **binding to gold surfaces**, besides thiol, a **thioctic acid** modification is also suitable.



Orthopyridyl disulfide (OPSS) forms a stable disulfide bridge with a SH group. OPSS-labelled oligos can be bound to peptides, proteins or other biomolecules.



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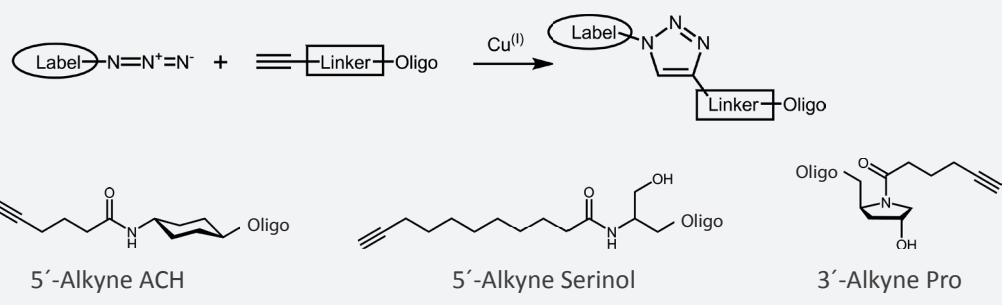
covalent coupling

immobilisation on surfaces

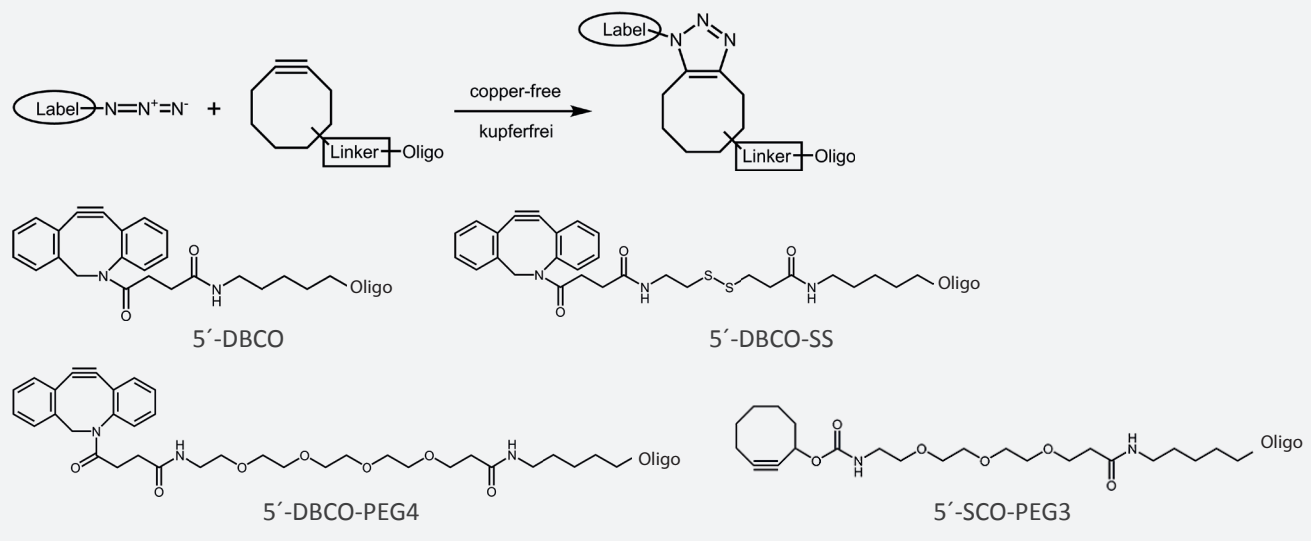
Reactive linkers on oligonucleotides

Click chemistry

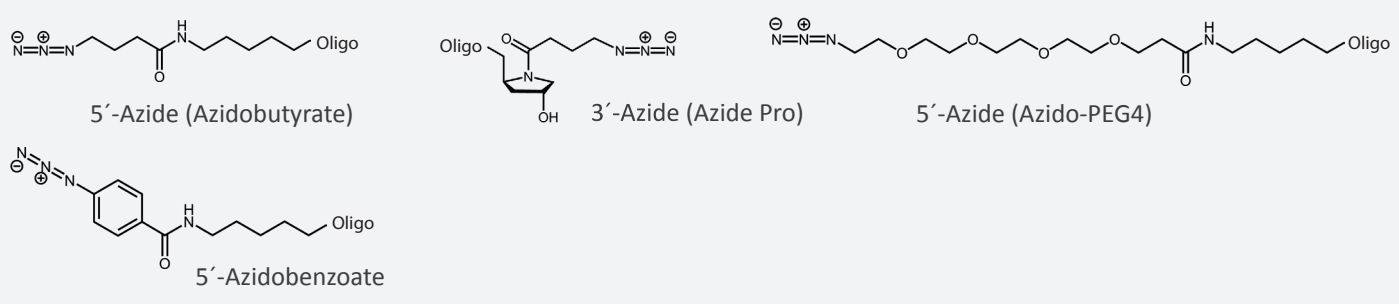
Copper-catalysed linkage of two molecules via **alkyne-azide cycloaddition**.



Copper-free coupling strategy through **DBCO- or SCO-PEG3-azide click chemistry**. Several different linkers are available.



Azide modification for copper-catalysed and copper-free click reactions. The azide reacts with alkynes or with the cyclooctyne derivative DBCO. Several linkers are available for this application.





covalent coupling

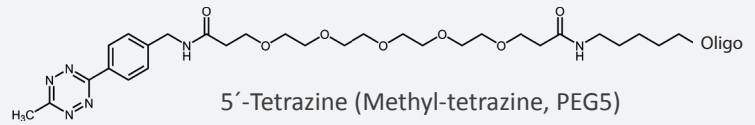
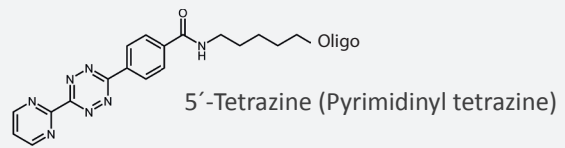
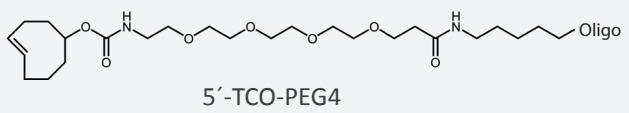
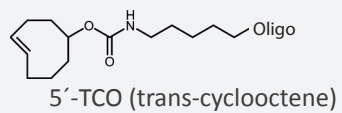
immobilisation on surfaces

Reactive linkers on oligonucleotides

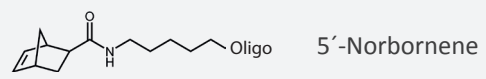
Inverse electron demand Diels-Alder conjugation



The **TCO-tetrazine cycloaddition** allows labelling of proteins or DNA molecules. Depending on requirements, different lengths of linkers are available.

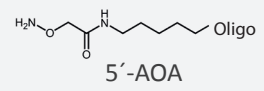
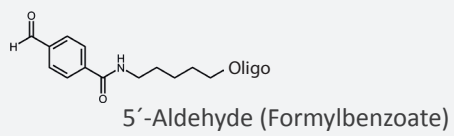
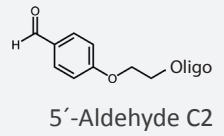
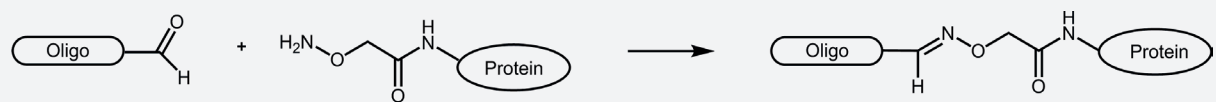


The click reaction between **norbornene and tetrazine** leads to the formation of a stable bond between the DNA molecules.



Aldehydes react with nucleophiles, e.g. thiol compounds or amino groups (e.g. hydrazine, aminoxy compounds) and can be used to link e.g. oligonucleotides to other molecules.

Aminoxyacetic acid (AOA) reacts with aldehydes to form stable oximes.



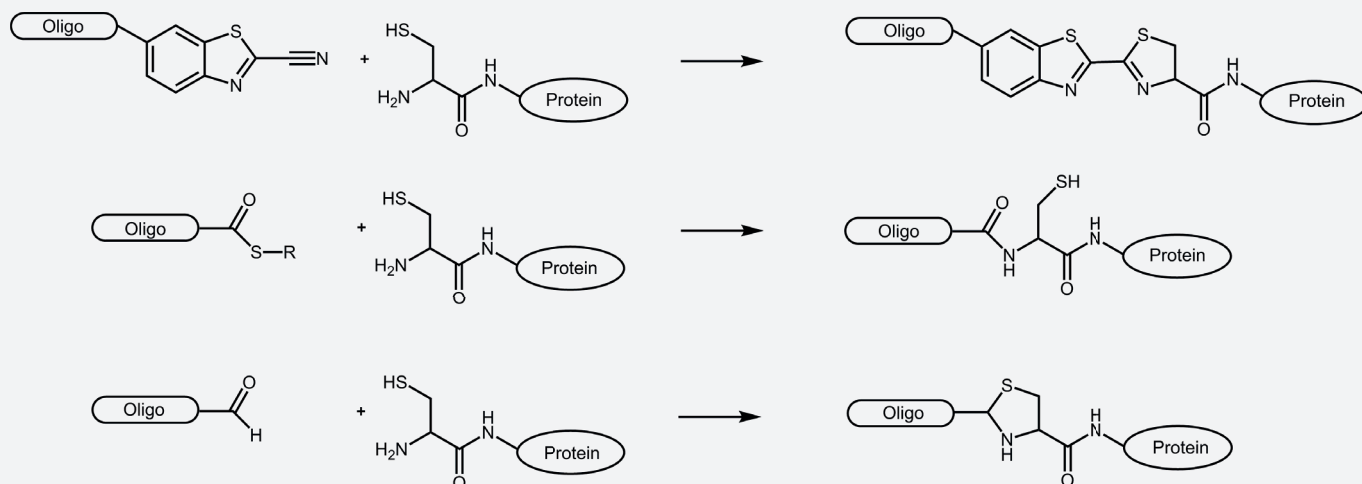


covalent coupling

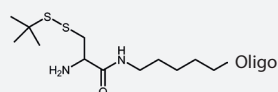
immobilisation on surfaces

Reactive linkers on oligonucleotides

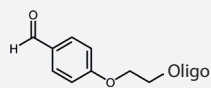
Native Ligation, cyanobenzothiazole-cysteine-ligation



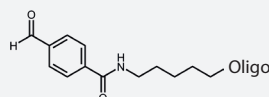
Selective labelling of peptides, proteins or other molecules through binding of terminal cysteins to a thiol, thioester or aldehyde.



5'-Cysteine

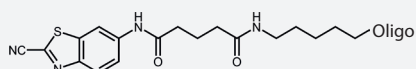


5'-Aldehyde C2



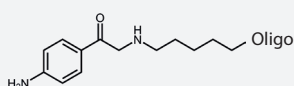
5'-Aldehyde (Formylbenzoate)

Cyanobenzothiazole reacts with a terminal cysteine group to efficiently label proteins.

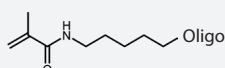


5'-Cyanobenzothiazole

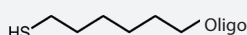
Immobilisation of biomolecules to modified surfaces using **carboxymethylaniline (4-CMA)** or **methacrylamide**. With this, methacrylamide-modified oligonucleotides bind to thiol- or thioctic acid-modified surfaces.



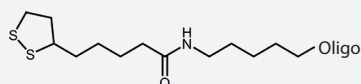
5'-Carboxymethylaniline



5'-Methacrylamide



5'-Thiol C6



5'-Thioctic acid





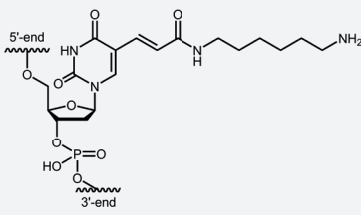
covalent
coupling

immobilisation
on
surfaces

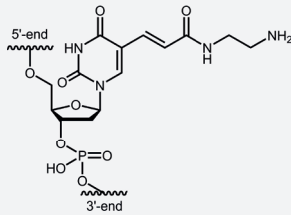
Reactive linkers on oligonucleotides

Internal modifications

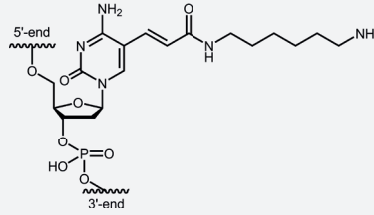
Aminolink - Carboxy



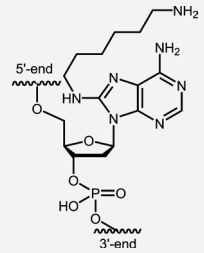
int. Aminolink C6-dT



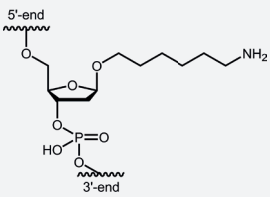
int. Aminolink C2-dT



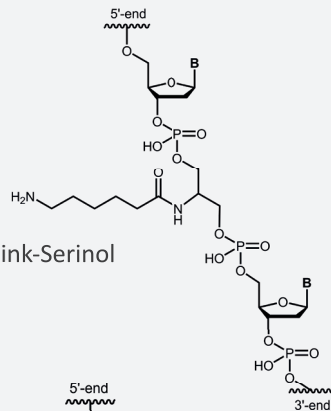
int. Aminolink C6-dC



int. Aminolink C6-dA

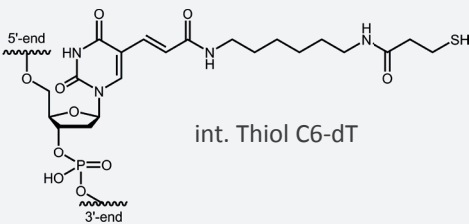


int. Aminolink C6-dR

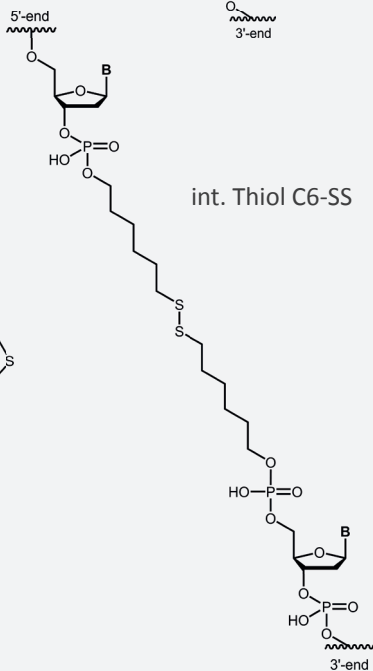


int. Aminolink-Serinol

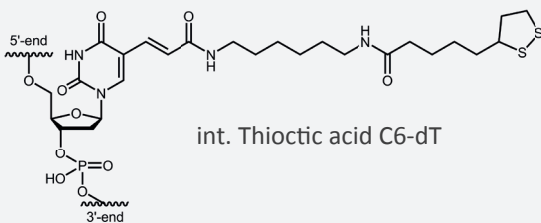
Thiol - Maleimide



int. Thiol C6-dT



int. Thiol C6-SS



int. Thioctic acid C6-dT



covalent
coupling

immobilisation
on
surfaces

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Click chemistry

