

Synthesis Reagents

For Automated Oligonucleotide Syntheses



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Deblocking Solutions

Activators

Capping Solutions

Oxidizer Solutions

Cleavage Solutions

Solvents, Molecular Sieves and other Reagents

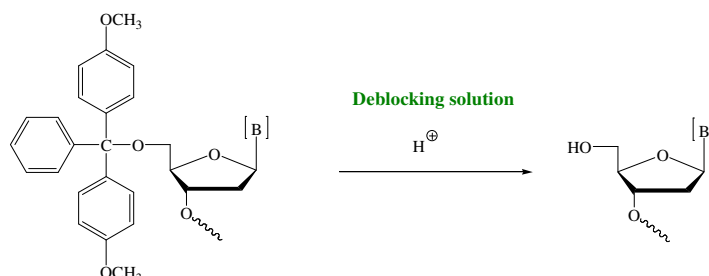
Purification

Fluorophores and Quenchers

Redox Labels



Detritylation



Deblocking solutions, used for the cleavage of the 5'-DMTr group at the last building block of nucleotide chain, can consist either of dichloroacetic or trichloroacetic acid in dichloromethane, dichloroethane or toluene. Our **Hyacinth Deblocking** solution (3% dichloroacetic acid in toluene at <30 ppm water) is applicable for the syntheses of high quality, large scale oligonucleotides.

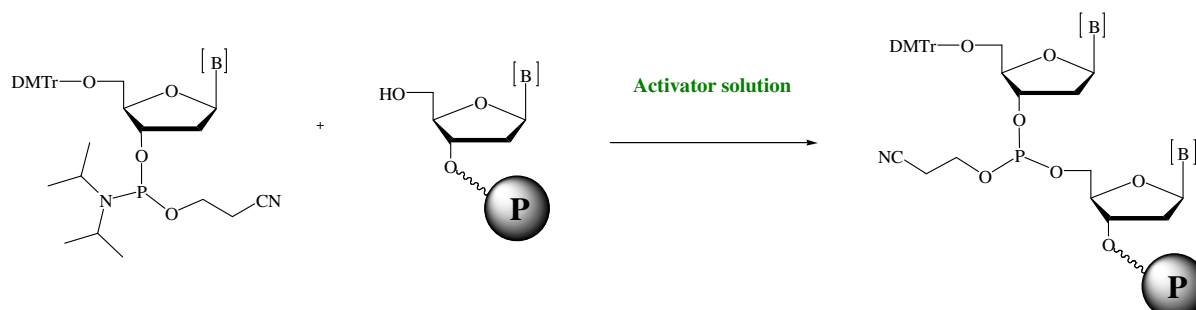
Product Code	Description	Unit Size
NC-0401	3% Dichloroacetic acid in methylene chloride	100 ml to 200 L
NC-0402	Hyacinth Deblocking Reagent 3% Dichloroacetic acid in toluene (water content <30 ppm)	100 ml to 200 L
NC-0403	2,5% Dichloroacetic acid in methylene chloride	100 ml to 200 L
NC-0404	3% Trichloroacetic acid in methylene chloride	100 ml to 200 L
NC-0405	3% Trichloroacetic acid in dichloroethane	100 ml to 200 L
NC-0406	5% Dichloroacetic acid in toluene (for ÄKTA oligopilot™)	100 ml to 200 L
NC-0407	3% Dichloroacetic acid in dichloroethane	100 ml to 200 L

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Any required adapters and connections are available from **emp BIOTECH**.

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Activation

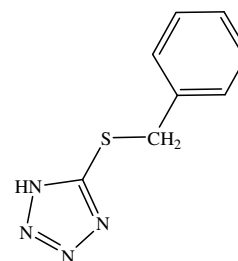


emp BIOTECH manufactures three different activators for use on various DNA and RNA synthesizers. They are available either in dry solid form for dissolution into anhydrous acetonitrile or as a prepared solution of various molarities.

Hyacinth BMT

Hyacinth BMT activator (also known as 5-Benzylmercapto-1H-tetrazole or BTT) demonstrates important advantages in the syntheses of oligonucleotides:

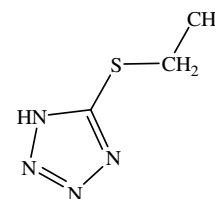
- Coupling efficiencies of 99% with impeccable quality
- Lower percentage of n - 1 sequences
- Dramatic reduction of coupling times to under 3 minutes in RNA syntheses
- Efficient RNA synthesis using 50% or less TBDMS, ACE or TOM monomer
- Excellent batch to batch consistency for reproducible and stable oligo production



Product Code	Description	Unit Size
NC-0101	Hyacinth BMT Crystals (5-Benzylmercaptotetrazole, BTT)	1.5 g to 50 kg
NC-0102	0.25 M Hyacinth BMT Solution (BMT in anhydrous acetonitrile)	100 ml to 200 L
NC-0103	0.3 M Hyacinth BMT Solution (BMT in anhydrous acetonitrile)	100 ml to 200 L
NC-0104	0.2 M Hyacinth BMT Solution (BMT in anhydrous acetonitrile)	100 ml to 200 L

ETT

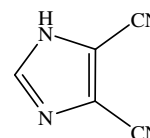
5-Ethylthiotetrazole (ETT) is an efficient activator for use in chemical synthesis of either DNA or RNA. ETT has excellent performance with respect to coupling times, coupling efficiency, consumption of phosphoramidites and reduction of n-1 impurities. ETT can be used for RNA synthesis with TBDMS, O-Methyl, TOM® or ACE® amidites.



Product Code	Description	Unit Size
NC-0107	ETT Crystals (5-Ethylmercaptotetrazole)	1.5 g to 50 kg
NC-0108	0.25 M Ethylmercaptotetrazole Solution (ETT in anhydrous acetonitrile)	100 ml to 200 L
NC-0109	0.5 M Ethylmercaptotetrazole Solution (ETT in anhydrous acetonitrile)	100 ml to 200 L
NC-0110	0.6 M Ethylmercaptotetrazole Solution (ETT in anhydrous acetonitrile)	100 ml to 200 L

DCI

4,5-Dicyanoimidazole (DCI) is an efficient activator for use in chemical synthesis of DNA.



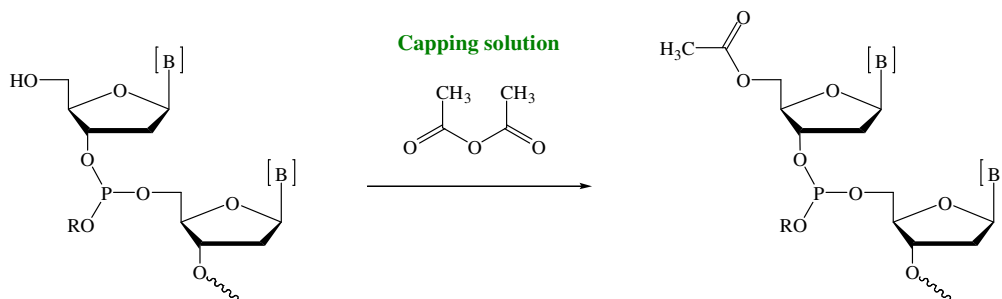
Product Code	Description	Unit Size
NC-0112	DCI Crystals (4,5-dicyanoimidazole)	1.5 g to 50 kg
NC-0105	0.25 M 4,5-dicyanoimidazole solution (DCI in anhydrous acetonitrile)	100 ml to 200 L

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Any required adapters and connections are available from **emp BIOTECH**.

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Capping Reagents



For each synthesis cycle, up to 1 to 2 % of free 5'-hydroxy groups remain after the phosphoramidite coupling step has been completed. By running a subsequent „Capping“ step using an anhydride, these free hydroxyl groups are converted to acetates and are hindered from further chain elongation and formation of long oligonucleotides with incorrect sequences. For optimal acetylation, a solution of acetic anhydride in THF or acetonitrile (**Capping A**) will be mixed *in situ* during reaction with a catalytic acting solution of N-methylimidazole (**Capping B**). Additives such as pyridine, lutidine or collidine function as mild bases to enhance the efficiency of the capping reaction.

Capping A

Product Code	Description	Unit Size
NC-0701	Capping A (THF / lutidine / acetic anhydride, V / V / V = 80 / 10 / 10)	100 ml to 200 L
NC-0702	Capping A (THF / acetic anhydride, V / V = 90 / 10)	100 ml to 200 L
NC-0703	Capping A (acetonitrile / lutidine / acetic anhydride, V / V / V = 80 / 10 / 10)	100 ml to 200 L
NC-0704	Capping A (acetonitrile / acetic anhydride, V / V = 90 / 10)	100 ml to 200 L
NC-0705	Capping A (20% N-methylimidazole in acetonitrile, for ÄKTA oligopilot™)	100 ml to 200 L
NC-0706	Capping A (THF / pyridine / acetic anhydride, V / V / V = 80 / 10 / 10)	100 ml to 200 L
NC-0707	Capping A Ultramild (THF / pyridine / phenoxyacetic anhydride, (V / V / V = 85 / 10 / 5)	100 ml to 200 L

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Capping B

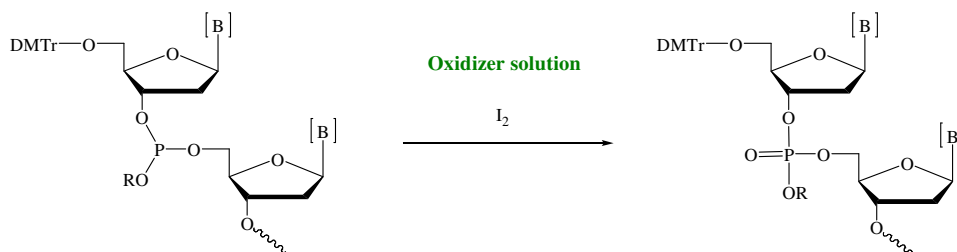
Product Code	Description	Unit Size
NC-0801	Capping B (16% N-methylimidazole in THF)	100 ml to 200 L
NC-0802	Capping B (10% N-methylimidazole in THF)	100 ml to 200 L
NC-0803	Capping B (10% N-methylimidazole in THF / pyridine, V / V = 80 / 10)	100 ml to 200 L
NC-0804	Capping B (10% N-methylimidazole in acetonitrile / pyridine, V / V = 80 / 10)	100 ml to 200 L
NC-0805	Capping B (6,5% DMAP in THF)	100 ml to 200 L
NC-0806	Capping B1 (40% acetic anhydride in acetonitrile, for ÄKTA oligopilot™)	100 ml to 200 L
NC-0807	Capping B2 (60% lutidine in acetonitrile, for ÄKTA oligopilot™)	100 ml to 200 L

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Oxidation



Oxidizer solutions promote the oxidation of trivalent phosphotriester into pentavalent phosphate triester using iodine as a mild oxidizing agent. They are available in standard 0.02 M or 0.05 M iodine concentrations with different mixtures of THF, pyridine and water. Custom mixtures are also available. The **Hyacinth Oxidizer** solution [0.05 M iodine in pyridine / water (V / V = 90 / 10)] is applicable for the syntheses of high quality, large-scale oligonucleotides.

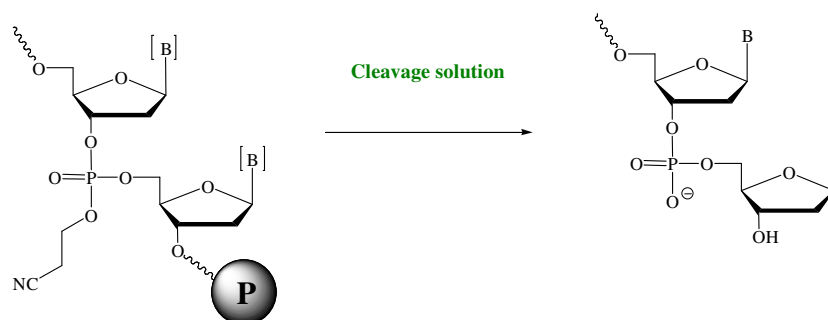
Product Code	Description	Unit Size
NC-0501	0.1 M Iodine in THF / pyridine / water (V / V / V = 78 / 20 / 2)	100 mL to 200 L
NC-0502	Hyacinth Oxidizer (0.05 M iodine in pyridine / water, (V / V = 90 / 10))	100 mL to 200 L
NC-0503	0.02 M Iodine in THF / pyridine / water (V / V / V = 66 / 22 / 12)	100 mL to 200 L
NC-0504	0.02 M Iodine in THF / pyridine / water (V / V / V = 90.6 / 0.4 / 9)	100 mL to 200 L
NC-0505	0.01 M Iodine in acetonitrile / pyridine / water (V / V / V = 64 / 6 / 30)	100 mL to 200 L
NC-0506	0.02 M Iodine in THF / pyridine / water (V / V / V = 89.6 / 0.4 / 10)	100 mL to 200 L
NC-0507	0.02 M Iodine in THF / pyridine / water (V / V / V = 70 / 20 / 10)	100 mL to 200 L

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Cleavage & Deprotection



Cleavage of the oligonucleotide from its solid support and subsequent removal of all protecting groups from the nucleobases and phosphates close the cycle of automated oligonucleotide synthesis and bring it to completion. For this purpose, three different **Cleavage solutions** from **emp BIOTECH** are available. The correct choice will depend on your requirements for standard, fast or mild cleavage conditions.

Standard: Usage of one volume of conc. ammonium hydroxide ($\geq 28\%$) under sealed conditions appropriate for removal of the protecting groups on the nucleobases

Fast: Usage of one volume of AMA under sealed conditions at $65\text{ }^{\circ}\text{C}$ for 10 min

Mild: *Version A* - Usage of one volume of conc. ammonium hydroxide ($\geq 28\%$) under sealed conditions for 8 h at room temperature

Version B - Cleavage from the support with 0.05 M potassium carbonate in methanol for 30 min at room temperature; following removal of the protecting groups under sealed conditions over night at room temperature

Product Code	Description	Unit Size
NC-0901	Ammonium hydroxide, concentrated ($\geq 28\%$)	100 mL to 200 L
NC-0902	AMA (conc. ammonia / 40% aqueous methylamine, V / V = 1 / 1)	100 mL to 200 L
NC-0903	0.05 M potassium carbonate in dry methanol	100 mL to 200 L

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Solvents

Product Code	Description	Unit Size
NC-0601	Methylene chloride (Water content <12 ppm)	100 mL to 200 L
NC-0602	Acetonitrile (Water content <20 ppm)	100 mL to 200 L
NC-0603	Ethyl acetate (Water content <20 ppm)	100 mL to 200 L
NC-0604	Pyridine (Water content <30 ppm)	100 mL to 200 L
NC-0605	Toluene (Water content <20 ppm)	100 mL to 200 L
NC-0606	10% Tetrahydrofurane in acetonitrile (Water content <20 ppm)	100 mL to 200 L

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Molecular Sieves

Catalog Number	Description	Unit Size
HR-0101-E100.0-001	Molecular Sieves, spheres, 2.5-5.0 mm, 3Å pore size, dust reduced	100 g
HR-0101-E500.0-001	Molecular Sieves, spheres, 2.5-5.0 mm, 3Å pore size, dust reduced	500 g
HR-0101-F001.0-001	Molecular Sieves, spheres, 2.5-5.0 mm, 3Å pore size, dust reduced	1 kg
HR-0102-E100.0-001	Molecular Sieves, spheres, 2.5-5.0 mm, 3Å pore size	100 g
HR-0102-E500.0-001	Molecular Sieves, spheres, 2.5-5.0 mm, 3Å pore size	500 g
HR-0102-F001.0-001	Molecular Sieves, spheres, 2.5-5.0 mm, 3Å pore size	1 kg

EZ•Dry Moisture Traps

- For maintaining water-free conditions in anhydrous solvents and reagents
- For removal of water from solvents

EZ•DRY Moisture Traps are used for efficient removal of water from solvents and reagents.

The traps will maintain anhydrous conditions of 30 ppm or less while resisting increases in water content due to routine or repeated opening of reagent containers.

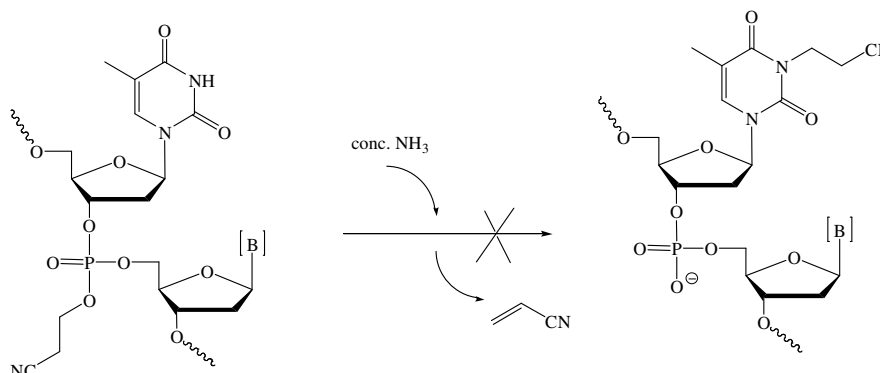
Catalog Number	Description	Unit Size
HR-0103-Z005.0-001	EZ Dry Mini Moisture Trap, activated molecular sieve sachets For volumes up to 100 mL. Smallest bottleneck: 12mm.	5 packs
HR-0103-Z010.0-001	EZ Dry Mini Moisture Trap, activated molecular sieve sachets For volumes up to 100 mL. Smallest bottleneck: 12mm.	10 packs
HR-0104-Z005.0-001	EZ Dry 1L Moisture Trap, activated molecular sieve sachets For volumes up to 1000 mL. Smallest bottleneck: 17mm.	5 packs
HR-0104-Z010.0-001	EZ Dry 1L Moisture Trap, activated molecular sieve sachets For volumes up to 1000 mL. Smallest bottleneck: 17mm.	10 packs
HR-0105-Z005.0-001	EZ Dry 2.5L Moisture Trap, activated molecular sieve sachets For volumes up to 2.5 L. Smallest bottleneck: 28mm.	5 packs
HR-0105-Z010.0-001	EZ Dry 2.5L Moisture Trap, activated molecular sieve sachets For volumes up to 2.5 L. Smallest bottleneck: 28mm.	10 packs
HR-0106-Z005.0-001	EZ Dry 4L Moisture Trap, activated molecular sieve sachets For volumes up to 4 L. Smallest bottleneck: 24mm.	5 packs
HR-0106-Z010.0-001	EZ Dry 4L Moisture Trap, activated molecular sieve sachets For volumes up to 4 L. Smallest bottleneck: 24mm.	10 packs
HR-0107-Z005.0-001	EZ Dry 20L Moisture Trap, activated molecular sieve sachets For volumes up to 20 L. Smallest bottleneck: 56mm.	5 packs
HR-0107-Z010.0-001	EZ Dry 20L Moisture Trap, activated molecular sieve sachets For volumes up to 20 L. Smallest bottleneck: 56mm.	10 packs

EZ•DRY Moisture Traps ensure your phosphoramidite and activator solutions remain dry and water-free from the first day to the last day of use. Each EZ•DRY batch is tested according to strict quality assurance specifications. This enables optimal coupling conditions and high quality nucleic acids.

EZ•DRY Moisture Traps are vacuum sealed, fully activated, and ready-to-use. The pouch material is inert to acetonitrile, pyridine and toluene. Five sizes are available for any bottle size and volume.

CE- β -Elimination

Alkylation of the N3-position of thymidine by acrylnitrile, which is liberated during β -elimination of the cyanoethyl group from the phosphates, is a well-known side reaction during simultaneous cleavage of the protecting groups and the oligonucleotide from the support.



This side reaction can be avoided by use of diethylamine in acetonitrile for the β -elimination. The oligonucleotide is subsequently cleaved from the support using any standard cleavage conditions.

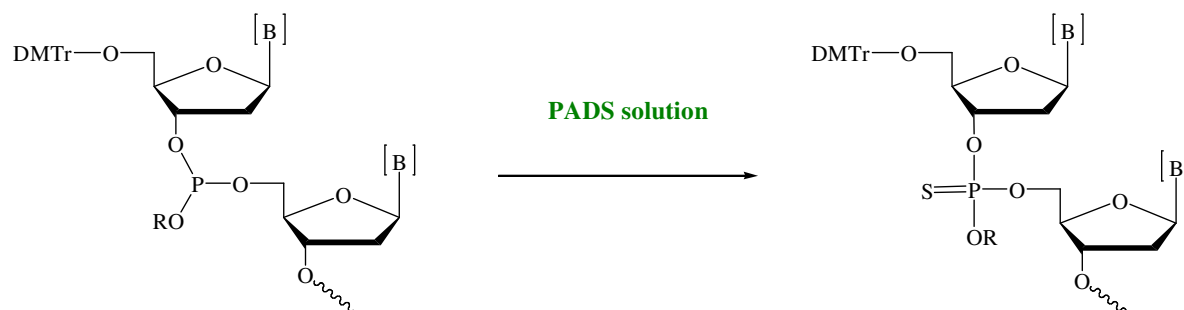
Product Code	Description	Unit Size
NC-0302	20% Diethylamine in acetonitrile (water content <20 ppm)	100 mL to 200 L
NC-0303	20% t-Butylamine in acetonitrile (water content <20 ppm)	100 mL to 200 L

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Sulphurizing Reagent



The phosphite triester formed in the coupling step can be converted to the corresponding phosphorothioate triester by treatment with 0.2 M solution of phenylacetyl disulfide (PADS) in acetonitrile and 3-picoline (1:1 = V:V). Typically, a 1.5-column volume of PADS solution is used, and sulphurization is complete within 3 minutes, at which time excess reagent is recovered from the reaction vessel by washing with acetonitrile.

Catalog Number	Description	Unit Size
NC-0304-E005.0-001	Phenylacetyl disulfide (PADS), solid	5 g
NC-0304-E025.0-001	Phenylacetyl disulfide (PADS), solid	25 g

We will deliver any requested packing size and/or will customize all packaging to suit your specific applications and requirements. If you do not see what you are looking for, please contact us.

Gel Filtration – Columns

Simple, fast and reliable. CentriPure are used for desalting and purification of oligonucleotides (≥ 10 bp) after removal of protecting groups or after post-synthetic labeling reactions. CentriPure is available for a variety of sample volumes. The columns are ready to use and packed with a pre-swollen matrix containing Kathon™ CG as preservative.

Catalog Number	Description	Unit Size
CP-0109-Z002.0-001	Centri•Pure N2 Columns	2 columns
CP-0109-Z050.0-001	Centri•Pure N2 Columns	50 columns
CP-0103-Z002.0-001	Centri•Pure N5 Columns	2 columns
CP-0103-Z050.0-001	Centri•Pure N5 Columns	50 columns
CP-0104-Z002.0-001	Centri•Pure N10 Columns	2 columns
CP-0104-Z050.0-001	Centri•Pure N10 Columns	50 columns
CP-0105-Z002.0-001	Centri•Pure N25 Columns	2 columns
CP-0105-Z025.0-001	Centri•Pure N25 Columns	25 columns
CP-0112-Z001.0-001	Centri•Pure N50 Columns	1 column
CP-0112-Z010.0-001	Centri•Pure N50 Columns	10 columns
CP-0118-Z001.0-001	Centri•Pure N100 Columns	1 column
CP-0118-Z010.0-001	Centri•Pure N100 Columns	10 columns

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Gel Filtration – Zetadex Desalting Resin

Catalog Number	Description	Unit Size
TM-0101-E100.0-001	Zetadex-25 Superfine	100 g
TM-0101-E500.0-001	Zetadex-25 Superfine	500 g
TM-0101-F001.0-001	Zetadex-25 Superfine	1 kg
TM-0102-E100.0-001	Zetadex-25 Fine	100 g
TM-0102-E500.0-001	Zetadex-25 Fine	500 g
TM-0102-F001.0-001	Zetadex-25 Fine	1 kg
TM-0103-E100.0-001	Zetadex-25 Medium	100 g
TM-0103-E500.0-001	Zetadex-25 Medium	500 g
TM-0103-F001.0-001	Zetadex-25 Medium	1 kg
TM-0104-E100.0-001	Zetadex-50 Superfine	100 g
TM-0104-E500.0-001	Zetadex-50 Superfine	500 g
TM-0104-F001.0-001	Zetadex-50 Superfine	1 kg
TM-0105-E100.0-001	Zetadex-50 Fine	100 g
TM-0105-E500.0-001	Zetadex-50 Fine	500 g
TM-0105-F001.0-001	Zetadex-50 Fine	1 kg
TM-0106-E100.0-001	Zetadex-50 Medium	100 g
TM-0106-E500.0-001	Zetadex-50 Medium	500 g
TM-0106-F001.0-001	Zetadex-50 Medium	1 kg

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Amidite Fluorophores and Labels

TAMRA-DMTr-phosphoramidite is used for convenient covalent labeling of nucleic acids at the 5'- or 3'-end as well as at any desired position during automated chemical synthesis of oligonucleotides. Due to the presence of the DMTr group, **TAMRA-DMTr-phosphoramidite** is readily soluble in acetonitrile and can be used in standard oligonucleotide synthesis coupling protocols. TAMRA has a high extinction coefficient and an excellent fluorescent quantum yield. For this reason, dual-labeled TAMRA/Fluorescein oligonucleotides are commonly used as probes with Real-Time-PCR devices.

When using **TAMRA-DMTr-phosphoramidite**, deprotection conditions are Milder than standard conditions and should be selected for use from the following list:

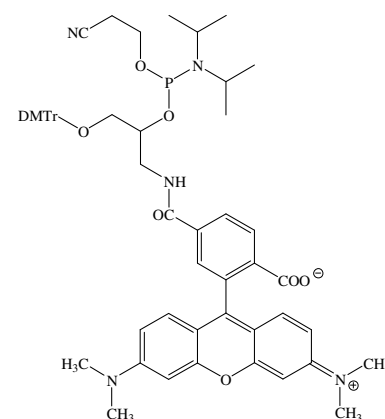
PAC-protection:

- 4 hours conc. ammonia at room temperature,
- 90 min AMA (conc. ammonia : methylamine = 1 : 1) at room temperature,
- 3 hours t-butylamine : methanol : water = 1 : 1 : 2 at 90 °C,
- 4 hours 0.05 M potassium carbonate in dry methanol at room temperature.

Standard-protection:

- 20 hours t-butylamine : water = 1 : 3 at 65 °C.

Standard procedures can be used if additional purification is required.



6-TAMRA-DMTr-CE-phosphoramidite

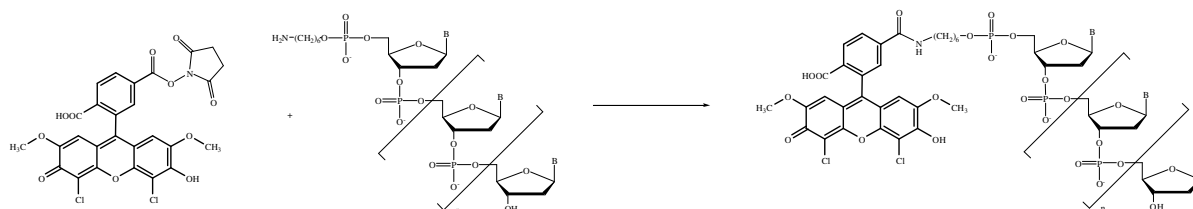
Catalog Number	Description	Unit Size
PF-0102-C100.0-001	5-Carboxytetramethylrhodamine DMTr-CE-phosphoramidite (5-TAMRA-DMTr-phosphoramidite)	100 µmol
PF-0102-D250.0-001	5-Carboxytetramethylrhodamine DMTr-CE-phosphoramidite (5-TAMRA-DMTr-phosphoramidite)	250 mg
PF-0103-C100.0-001	6-Carboxytetramethyl-rhodamine DMTr-CE-phosphoramidite (6-TAMRA-DMTr-phosphoramidite)	100 µmol
PF-0103-D250.0-001	6-Carboxytetramethyl-rhodamine DMTr-CE-phosphoramidite (6-TAMRA-DMTr-phosphoramidite)	250 mg
PF-0104-C100.0-001	6-Carboxyfluorescein-dipivaloyl CE-phosphoramidite (6-FAM-phosphoramidite)	100 µmol
PF-0104-D250.0-001	6-Carboxyfluorescein-dipivaloyl CE-phosphoramidite (6-FAM-phosphoramidite)	250 mg
PF-0104-E001.0-001	6-Carboxyfluorescein-dipivaloyl CE-phosphoramidite (6-FAM-phosphoramidite)	1 g

Amidite Fluorophores and Labels

Catalog Number	Description	Unit Size
PF-0301-C100.0-001	Dabcyl-5'-phosphoramidite	100 μ mol
PF-0301-D250.0-001	Dabcyl-5'-phosphoramidite	250 mg
PF-0302-C100.0-001	Dabcyl-3'-phosphoramidite	100 μ mol
PF-0302-D250.0-001	Dabcyl-3'-phosphoramidite	250 mg

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Fluorophore Activated Esters



Amino-functionalized oligonucleotides react with succinimidyl ester activated dyes to form conjugates having stable amide bonds.

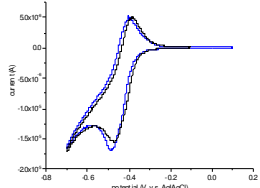
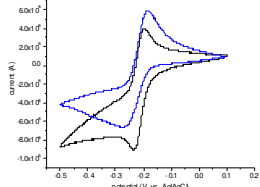
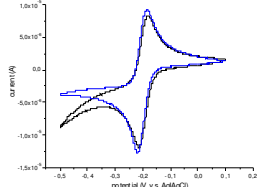
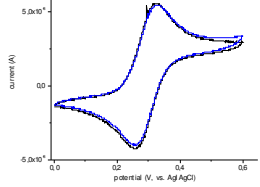
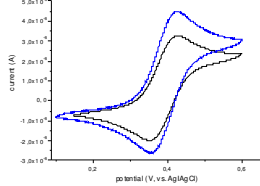
TECHNICAL NOTE: Before starting the coupling reaction, the oligonucleotide must be lyophilized once with 0.1 M sodium bicarbonate in order to remove residue ammonia ions!

Product Code	Description	Unit Size
AF-0401	MANT-NHS ester Exc.: 325 nm Em.: 412 nm	5 mg to 100 g
AF-0105	5-FAM-NHS ester Exc.: 496 nm Em.: 519 nm	5 mg to 1 kg
AF-0106	6-FAM-NHS ester Exc.: 497 nm Em.: 519 nm	5 mg to 1 kg
AF-0107	5-TAMRA-NHS ester Exc.: 550 nm Em.: 575 nm	5 mg to 1 kg
AF-0108	6-TAMRA-NHS ester Exc.: 549 nm Em.: 572 nm	5 mg to 1 kg
AF-0110	6-ROX-NHS ester Exc.: 587 nm Em.: 599 nm	5 mg to 1 kg
AF-0407	PT-678-NHS ester Exc.: 678 nm Em.: 418 nm	5 mg to 100 g

We will deliver any requested packing size and/or will customize all packaging to suit your specific applications and requirements. If you do not see what you are looking for, please contact us.

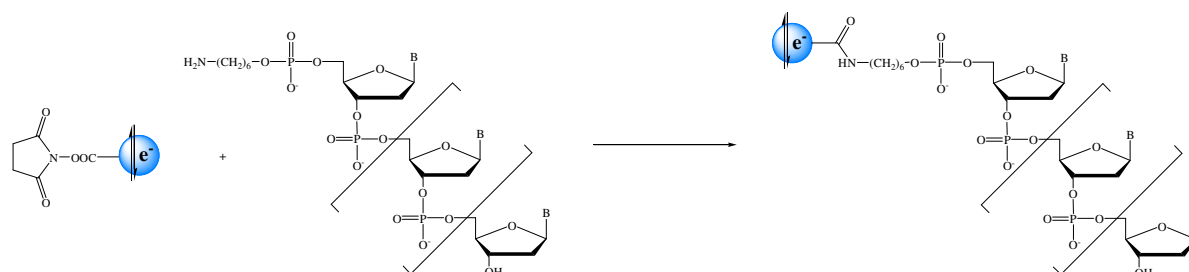
Biosensoric

For **electrochemical applications**, **emp BIOTECH** now offers a wide variety of **ElectroActive** biosensors for labeling of biomolecules, specifically nucleic acids, to form labeled probes equipped with redox-active reporter groups.

Product Code	Class of Redox Label	Electrode*	Potential Ef (V) vs. Ag/AgCl (1M KCl)	Peak Separation ΔEp (mV) [u = 0.1 V/s]	Stability of Electrochemistry [20 Cycles]	Cyclic Voltamogram Au Electrode (black) Au-dsDNA-Electrode (blue)
AF-0405	Quinone	Au	-0.425	68	stable	
		Au-dsDNA	-0.428	79	stable	
AF-0201	Phenothiazine	Au	-0.216	31	stable	
		Au-dsDNA	-0.222	81	stable	
AF-0202	Phenothiazine	Au	-0.198	29	stable	
		Au-dsDNA	-0.201	31	stable	
AF-0402	Metal Complex	Au	+0.292	55	stable	
		Au-dsDNA	+0.292	58	stable	
AF-0403	Metal Complex	Au	+0.390	59	stable	
		Au-dsDNA	+0.390	57	stable	

* Au electrode – gold wire; Au-dsDNA electrode – gold wire modified with dsDNA (18 base pairs)

Biosensoric



Amino-functionalized oligonucleotides are reacted with succinimidyl ester activated redox labels to form conjugates having stable amide bonds.

TECHNICAL NOTE: Before starting the coupling reaction, the oligonucleotide must be lyophilized once with 0.1 M sodium bicarbonate in order to remove residue ammonia ions!

Catalog Number	Description / Specification	Unit Size
AF-0201-D005.0-001	Dicarboxymethylene Blue NHS ester (DCMB-SE)	5 mg
AF-0202-D005.0-001	Monocarboxymethylene Blue NHS ester (MCMB-SE)	5 mg
AF-0402-D005.0-001	Ferrocene carboxylic acid NHS ester (Ferrocene-SE)	5 mg
AF-0403-D005.0-001	Ferrocene-amidopentyl carboxylic acid NHS ester (Ferrocene-C6-SE)	5 mg
AF-0405-D005.0-001	Anthraquinone-2-amidopentyl carboxylic acid NHS ester (AQI-C6-SE)	5 mg

Additional novel **ElectroActive** biosensors are currently under development.

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Packaging Specifications

Glass bottles

- 100 mL amber glass bottle with septum
- 200 mL amber glass bottle with 24-405 thread
- 200 mL amber glass bottle with 28-405 thread
- 450 mL amber glass bottle with 24-405 thread
- 450 mL amber glass bottle with 28-405 thread
- 500 ml clear glass Schott bottle with GL45 thread
- 1 L clear glass Schott bottle with GL45 thread
- 1 L amber glass bottle with GL45 thread
- 2.5 L amber glass bottle with GL45 thread
- 4 L amber glass bottle with GL45 thread
- 4 L amber glass bottle with 38-430 thread

Stainless steel drums

SS 1.4571 (AISI 316Ti) or 1.4404 (AISI 316L) for corrosive reagents

SS 1.4301 (AISI 304) for non-corrosive reagents

With UN 1A1W/X2.0/900 certification

Drum size (max. filling volume):

- 10 Liters (9 Liters)
- 20 Liters (19 Liters)
- 30 Liters (28 Liters)
- 50 Liters (47 Liters)
- 66 Liters (60 Liters)
- 200 Liters (190 Liters)

Threaded connection: G2 Tri-Sure Closure with PTFE seal.

Operating pressure: Up to 1.5 bar

Any required adapters and connections are available from **emp BIOTECH**.

We will deliver any requested packing size and/or will customize all packaging to suit your specific applications and requirements. If you do not see what you are looking for, please contact us.

Terms and Conditions

For conducting business with **emp BIOTECH**, please review our general terms and conditions as listed on our website www.empbiotech.com.

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