

РМО мономеры

Технические характеристики

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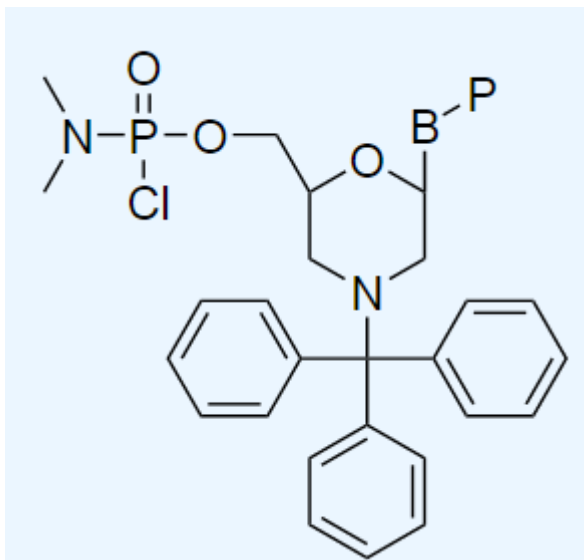
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PMO monomers, specifically phosphorodiamidate morpholino (PDM) monomers, play a vital role in the synthesis of oligonucleotides called phosphorodiamidate morpholino oligonucleotides (PMOs). PMOs are a class of antisense therapeutic agents that bind to target RNA molecules and modulate gene expression. Here's a breakdown of how PMO monomers are applied in oligo synthesis:

Function:

- PMO monomers act as the building blocks for PMO oligonucleotides.
- Each PMO monomer contains a morpholino ring, a linker group, and a phosphoramidate moiety.
- The morpholino ring specifically recognizes and binds to complementary RNA sequences.
- The linker group connects the morpholino ring to the phosphoramidate moiety.
- The phosphoramidate moiety plays a crucial role in linking individual PMO monomers during oligo synthesis.

Process:

- PMO synthesis typically employs a solid-phase approach similar to DNA synthesis.
- A controlled sequence of PMO monomers is attached to a solid support one by one.
- Techniques like Fmoc (Fluorenylmethoxycarbonyl) or trityl chemistry are used to protect and deprotect functional groups on the monomers during the coupling process.
- After chain assembly, the PMO oligonucleotide is cleaved from the solid support and deprotected to obtain the final product.

Advantages of PMO Monomers:

Compared to traditional DNA oligonucleotides, PMO oligonucleotides made with PMO monomers offer several advantages:

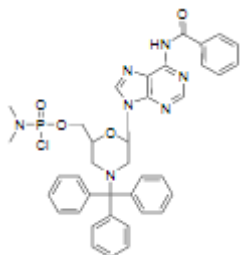
- Increased stability: PMO backbone is more resistant to enzymatic degradation by nucleases.
- Improved binding affinity: PMO oligonucleotides can exhibit higher binding affinity towards target RNA.
- Reduced toxicity: PMO oligonucleotides generally demonstrate lower off-target effects and toxicity compared to DNA counterparts.

Challenges and Future Directions:

Although PMO monomers offer numerous benefits, there are ongoing efforts to improve PMO synthesis:

- Optimizing deprotection and coupling methods for higher efficiency.
- Developing new PMO chemistries compatible with automated synthesizers for faster and more scalable production.
- Creating new PMO conjugates with improved delivery properties.

Overall, PMO monomers are a critical component in the synthesis of PMO oligonucleotides, a promising class of therapeutic agents with the potential to treat various diseases.



Morpholino A subunit

(6-(6-benzamido-9H-purin-9-yl)-4-tritylmorpholin-2-yl) methyl dimethylphosphoramidochloridate

Catalog No.

PR1-007

CAS No.

956139-18-7

Molecular Formula

C₃₈H₃₇ClN₇O₄P

Molecular Weight

722.17

Appearance

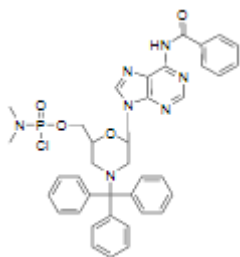
White to faint-yellow powder

Purity

HPLC ≥98.0%

Storage

-20°C



Morpholino C subunit

6-(4-benzamido-2-oxopyrimidin-1(2H)-yl)-4-tritylmorpholin-2-yl)methyl Dimethylphosphoramidochloridate

Catalog No.

PR3-014

CAS No.

956139-21-2

Molecular Formula

C₃₇H₃₇ClN₅O₅P

Molecular Weight

698.15

Appearance

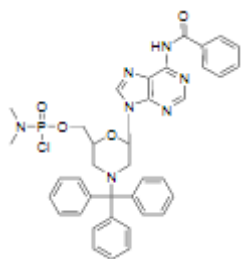
White to faint-yellow powder

Purity

HPLC $\geq 98.0\%$

Storage

-20°C

**Morpholino T subunit**

6-(5-methyl-2,4-dioxo-3,4-dihydropyrimidin-1(2H)-yl)-4-phenylmorpholin-2-yl)methyl dimethylphosphoramidochloridate

Catalog No.

PR4-003

CAS No.

956139-30-3

Molecular Formula

C₃₁H₃₄ClN₄O₅P

Molecular Weight

609.05

Appearance

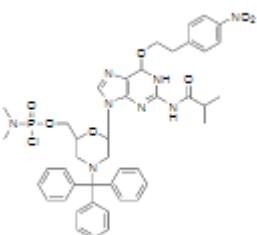
White to faint-yellow powder

Purity

HPLC $\geq 98.0\%$

Storage

-20°C

**O(6)-NPE-N(2)-iBu protected G PMO Monomer**

N2-isobutyryl-O6-p-nitrophenethyl-9-(4'-trityl-6'-methoxy-(dimethylamino)(chloro)phosphate)-morpholin-2'-yl)-guanine

Catalog No.

PR2-012

Molecular Formula

C₄₃H₄₆ClN₈O₇P

Molecular Weight

853.32

Appearance

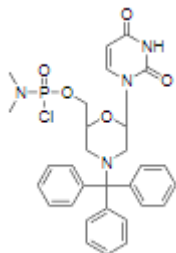
White to faint yellow powder, free from visible foreign matter

Purity

HPLC $\geq$ 98.0%

Storage

-20°C



Morpholino U

6-(2, 4-dioxo-3, 4-dihydropyrimidin-1(2H)-yl)-4-tritylmorpholin-2-yl)methyl dimethylphosphoramidochloridate

Catalog No.

PR5-074

Molecular Formula

C₃₀H₃₂ClN₄O₅P

Molecular Weight

595.03

Appearance

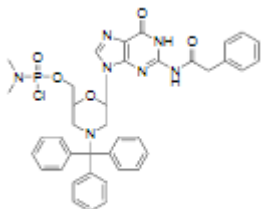
White to faint-yellow powder

Purity

HPLC $\geq$ 98.0%

Storage

-20°C



Morpholino G(PhAc) subunit

6-(6-oxo-2-(2-phenylacetamido)-1H-purin-9(6H)-yl)-4-tritylmorpholin-2-yl)methyl dimethylphosphoramidochloridate

Catalog No.

PR2-051

Molecular Formula

C₃₉H₃₉ClN₇O₅P

Molecular Weight

752.2

Appearance

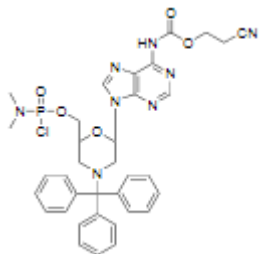
White to yellow powder, free from visible foreign matter

Purity

HPLC $\geq$ 98.0%

Storage

Below -40°C



Morpholino A(Ceoc) subunit

2-cyanoethyl (9-(6-(((chloro(dimethylamino)phosphoryl)oxy)methyl)-4-tritylmorpholin-2-yl)-9H-purin-6-yl)carbamate

Catalog No.

PR1-113

Molecular Formula

C₃₅H₃₆ClN₈O₅P

Molecular Weight

715.15

Appearance

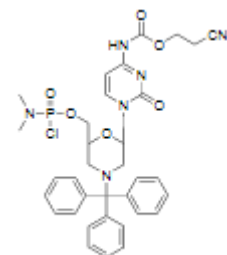
White, off-white to light yellow powder, free from visible foreign matter

Purity

UPLC≥98%

Storage

-20°C



Morpholino C(Ceoc) subunit

2-cyanoethyl (1-(6-(((chloro(dimethylamino)phosphoryl)oxy)methyl)-4-tritylmorpholin-2-yl)-2-oxo-1, 2-dihydropyrimidin-4-yl)carbamate

Catalog No.

PR3-128

Molecular Formula

C₃₄H₃₆ClN₆O₆P

Molecular Weight

691.12

Appearance

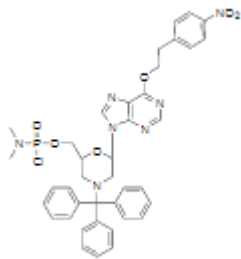
White, off-white to light yellow powder, free from visible foreign matter

Purity

UPLC≥98%

Storage

-20°C



O(6)-NPE I PMO Monomer

O6-p-nitrophenethyl-9-(4'-trityl-6'-methoxy-(dimethylamino)(chloro)phosphate)-morpholin-2'-yl)-inosine

Catalog No.

OP-260

Molecular Formula

C₃₉H₃₉ClN₇O₆P

Molecular Weight

768.21

Appearance

White, off-white to light yellow powder, free from visible foreign matter

Purity

UPLC≥98%

Storage

-20°C

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