



核苷

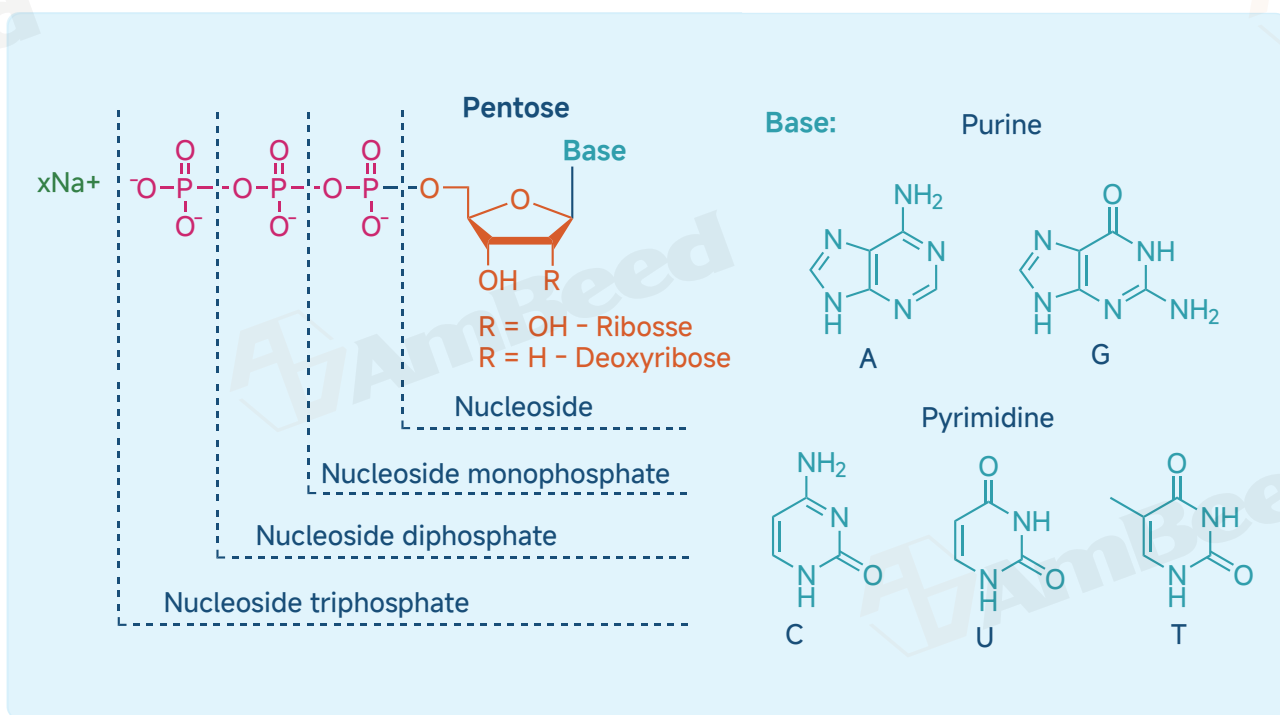
核苷 (Nucleoside) 是一类糖苷的总称。核苷是核酸和核苷酸的组成成分。核苷都是由D-核糖或D-2-脱氧核糖与嘧啶碱或嘌呤碱缩合而成。由D-核糖生成的核苷称核糖核苷, 参与RNA组成, 由D- α -脱氧核糖生成的核苷称脱氧核糖核苷, 参与DNA组成。

在寡核苷酸相关研究中, 存在几种糖骨架的类似物。由于RNA的稳定性较低, 容易水解, 因此可以使用几种更稳定的核糖替代核苷或核苷酸类似物, 这些类似物能正确结合RNA, 同时又具有更高的稳定性。

在测序工作中, 有时会使用双脱氧核苷酸, 这中核苷酸类似物缺乏一个能接受磷酸基团的3' -羟基。DNA聚合酶无法将这些类似物和常规核苷酸区分开来。当双脱氧核苷被DNA聚合酶结合时, 无法继续延伸DNA, 则DNA合成终止。

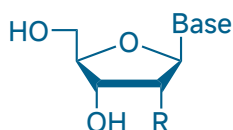
在药学研究中, 核苷类似物常用作抗病毒药物或抗癌药物。由于带有电荷的分子难以穿过细胞膜, 因此这类药物多数不带有磷酸基团, 在进入细胞后, 经胞内转化为三磷酸形式从而发挥作用。病毒中酸聚合酶或癌细胞中的聚合酶无法将核苷酸类似物与核苷酸区分开来, 修饰核苷被掺入DNA或RNA链中, 使合成终止。

核苷与核苷酸



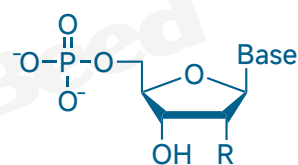
核苷和核苷酸是核酸 (如DNA和RNA) 的基本组分, 它们在各种细胞过程中发挥关键作用。这些分子由氮碱基、五碳糖和一个或多个磷酸基团组成, 它们对于保持和传递遗传信息、作为信号分子发挥功能, 以及在生物能量储存中扮演重要角色。

核苷



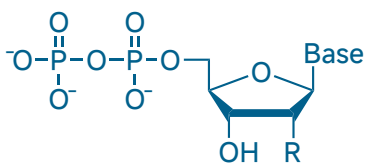
R = OH - Nucleotide Base = AGCU
R = H - Deoxynucleotide Base = AGCTU

单磷酸核苷酸



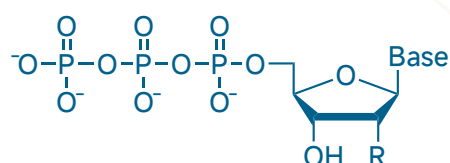
R = OH - NMP Base = AGCU
R = H - dNMP Base = AGCTU

二磷酸核苷酸



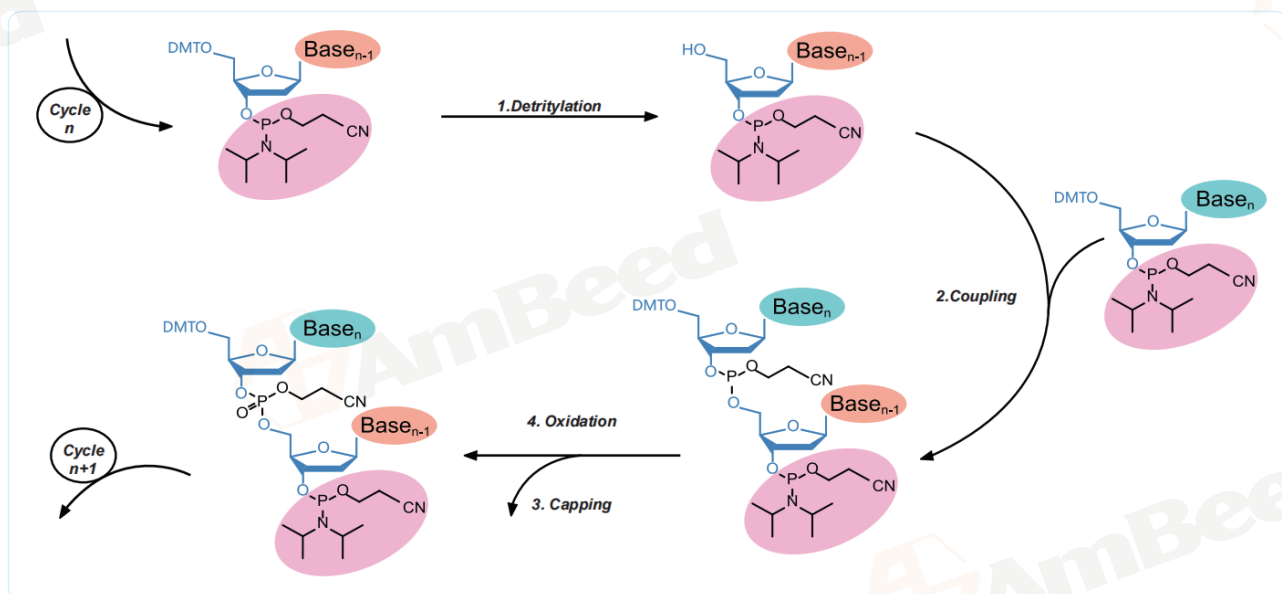
R = OH - NDP Base = AGCU
R = H - dNDP Base = AGCTU

三磷酸核苷酸

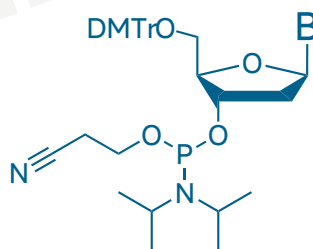


R = OH - NTP Base = AGCU
R = H - dNTP Base = AGCTU

亚磷酰胺单体核苷

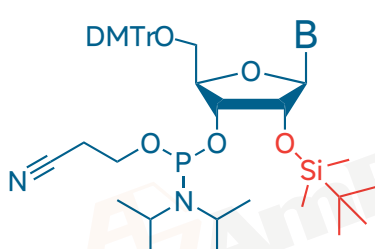


寡核苷酸的合成常用的是一种20世纪80年代开发的被称为“亚磷酰胺法”的化学合成法。其过程主要包括脱三苯甲基 (Detritylation) → 激活 (Activation) → 偶联 (Coupling) → 加帽 (Capping) → 氧化 (Oxidation) → 脱三苯甲基 (Detritylation) 依次循环, 一次循环添加一个碱基, 新添的碱基都被一个保护基团封端, 该保护基团阻止其反应延伸链, 直到该封端被移除并添加下一个碱基。由于在固相上进行反应, 每添加一个碱基后会通过将多余的反应物洗去来控制反应的进程, 很容易实现自动化, 所以该方法很快就被广泛使用。



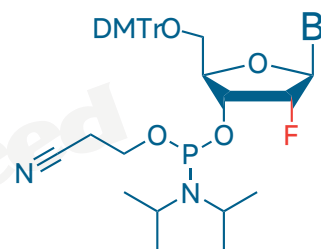
DNA 亚磷酰胺单体

B = protected A, G, C and U, T base



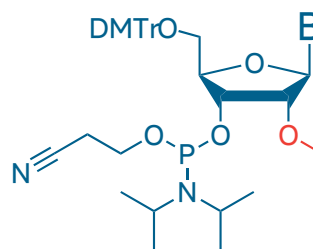
RNA 亚磷酰胺单体

B = protected A, G, C and U base



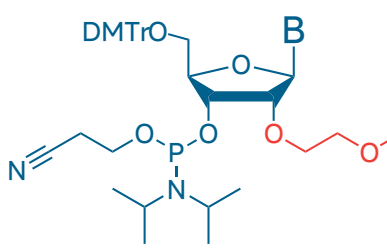
2'-F 亚磷酰胺单体

B = protected A, G, C and U base



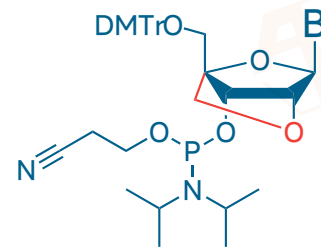
2'-OMe 亚磷酰胺单体

B = protected A, G, C and U base



2'-MOE 亚磷酰胺单体

B = protected A, G, C and U base



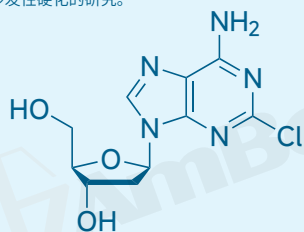
LNA 亚磷酰胺单体

B = protected A, G, C and U base

核苷类似物

Cladribine

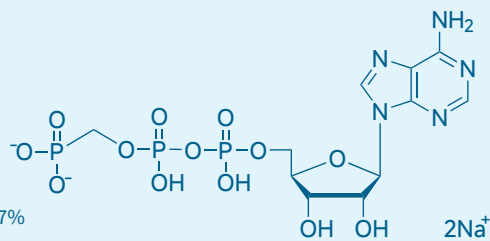
Cladribine (2-Chloro-2'-deoxyadenosine) 是一种嘌呤核苷类似物,是具有口服活性的腺苷脱氨酶 (adenosine deaminase) 抑制剂。Cladribine 能作为 DNA 合成 (DNA synthesis) 的抑制剂,可阻断受损 DNA 的修复。Cladribine 可以抑制 DNA 甲基化。Cladribine 具有抗淋巴瘤活性,可用于一些血液恶性肿瘤和多发性硬化的研究。



A410468 | 98%
4291-63-8

AMP-PCP disodium

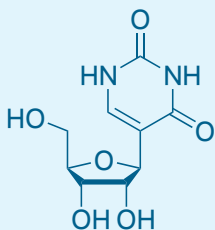
AMP-PCP disodium 是一种 ATP 类似物,可以以 Kd 值为 3.8 μM 来结合到 Hsp90 的 N 末端结构域。AMP-PCP disodium 结合有利于 Hsp90 活性同型二聚体的形成。



A192734 | 97%
7414-56-4

Pseudouridine

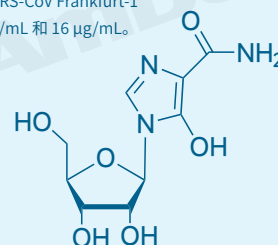
Pseudouridine 是尿苷的一个异构体,也是非编码 RNA 中最丰富的修饰核苷。Pseudouridine 可在 rRNA 和 tRNA 中微调 and 稳定区域结构,以维持它们在 mRNA 解码、核糖体组装、加工和翻译中的功能。



A426150 | 98%
1445-07-4

Mizoribine

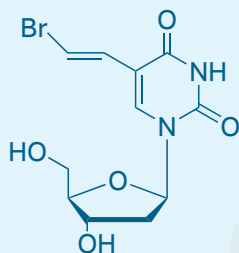
Mizoribine (NSC 289637) 抑制 HCV RNA 复制,具有抗 HCV 活性,IC50 约为 100 μM 。Mizoribine 是一种免疫抑制剂。Mizoribine 抑制 IMPDH。Mizoribine 抑制 SARS-CoV 复制,对 SARS-CoV Frankfurt-1 和 SARS-CoV HKU39849 的 IC50 分别为 3.5 $\mu\text{g/mL}$ 和 16 $\mu\text{g/mL}$ 。



A306960 | 98%
50924-49-7

Brivudine

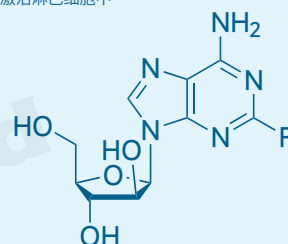
Brivudine 是具有抗病毒活性的胸苷类似物,用于早期急性带状疱疹的研究。



A320199 | 95%
69304-47-8

Fludarabine

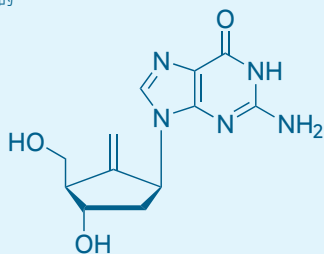
Fludarabine (F-ara-A; NSC 118218) 是一种 DNA 合成抑制剂和一种在淋巴增生性恶性肿瘤中具有抗肿瘤活性的氟化嘌呤类似物。Fludarabine 抑制细胞因子诱导的正常静止或激活淋巴细胞中 STAT1 和 STAT1 依赖性基因转录的激活。



A175546 | 98%
21679-14-1

Entecavir

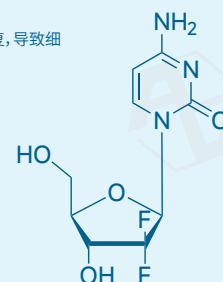
Entecavir (SQ 34676; BMS 200475) 是有选择且有效地 HBV 抑制剂,在 HepG2 细胞中的 EC50 值为 3.75 nM。



A948237 | 98%
142217-69-4

Gemcitabine

Gemcitabine (LY 188011) 是一种嘧啶核苷类似物抗代谢药 (nucleoside antimetabolite/analog) 和抗肿瘤剂。Gemcitabine 抑制 DNA 合成 (DNA synthesis) 和修复,导致细胞自噬 (autophagy) 和凋亡 (apoptosis)。



A433642 | 98%
95058-81-4

核苷类似物

货号	名称	纯度	货号	名称	纯度
A266115	6-Chloroguanineriboside	95%	A487443	4-Thiouridine	95%
A161112	8-Bromo-2'-deoxyadenosine	98%	A386837	5-Azacytidine	95%
A562467	(S)-Tenofovir	95%	A696347	5-Bromo-2'-fluoro-2'-deoxyuridine	98%
A913542	2'-Deoxy-2'-fluoro-5-iodouridine	98%	A391768	5-Bromo-2'-O-Methyluridine	97%
A628336	3'-Deoxy-3'-fluorouridine	97%	A296343	5-Bromo-2',3',5'-tri-O-acetyluridine	97%
A415035	Gemcitabine impurity C	98%	A115724	5-Bromouridine	98%
A141122	1-beta-D-Arabinofuranosyluracil	98%	A639135	5-Chloro-2'-deoxyuridine	98%
A273315	2',3'-Dideoxy-5-iodocytidine	99+%	A124323	5-Ethynyluridine	95%
A752301	2',3'-Dideoxy-5-iodouridine	98%	A266441	5-Fluoro-2'-deoxycytidine	95%
A1176749	2' -O,4' -C-Methyleneuridine	98%	A329577	5-Fluoro-4-hydroxy-2-methoxypyrimidine	97%
A849783	2'-Deoxy-2'-fluoroadenosine	98%	A805463	5-Fluorocytidine	95%
A194288	2'-Deoxy-2'-fluoroguanosine	95%	A268668	5-Hydroxymethyl-2'-deoxyuridine	95%
A711457	7-Deazaguanosine	97%	A143930	5-Iodocytidine	98%
A217092	8-Bromo-2'-deoxyguanosine	98%	A115349	5-Iodouridine	98%
A478740	3'-Deoxyguanosine	95%	A412544	5-Methoxyuridine	95%
A148637	2'-Deoxy-2'-fluorocytidine	95%	A197498	5-Methyl-2'-O-methylcytidine	97%
A100390	2'-Deoxy-2'-fluorouridine	98%	A100251	5-Methylcytidine	97%
A713577	2'-Deoxy-5'-O-DMT-2'-fluorouridine	96%	A111045	5-Methyluridine	97%
A106243	2'-Deoxycytidine	97%	A132635	5'-O-(4,4'-Dimethoxytrityl)-2'-deoxyuridine	98%
A733869	Adenosine	98%	A384927	5'-O-DMT-2'-TBDMS-Uridine	97%
A264907	2'-O-(2-Methoxyethyl)-cytidine	95+%	A458903	6-Azuridine	98%
A299991	2'-O-(2-Methoxyethyl)-uridine	95%	A206546	6-O-Methyl Guanosine	97%
A103746	2'-O-Methylcytidine	97%	A181463	7-Deaza-2',3'-dideoxyadenosine	95+%
A619213	3'-Deoxyuridine	95+%	A422700	7-Deaza-2',3'-dideoxyguanosine	97%
A105686	3'-Deoxy-3'-fluoroadenosine	98%	A364032	7-Deaza-2'-deoxy-7-iodoadenosine	98%
A913603	3-Methyluridine	97%	A642547	7-Iodo-2',3'-dideoxy-7-deazaadenosine	97%
A294505	3' -O-t-Bulyldimethylsilylthymidine	97%	A602098	7-Iodo-2',3'-dideoxy-7-deaza-guanosine	98%
A166600	5-Fluoro-5'-deoxycytidine	97%	A312793	7-Iodo-7-deaza-2'-deoxyguanosine	95%
A920853	3' -deoxy-cytidin	98%	A130841	8-Bromoadenosine	98%
A317058	3'-Deoxy-3'-fluorocytidine	95%	A121511	8-Bromoguanosine	97%
A166879	5-Bromo-D-cytidine	95%	A539310	8-Chloroazatadine	97%

核苷类似物

货号	名称	纯度	货号	名称	纯度
A698467	Arinosine	97%	A133207	Idoxuridine	98%
A310646	Abacavir	98%	A167476	Inarigivir	98%
A176069	Adefovir	99%	A134479	Islatravir	98%
A192734	AMP-PCP disodium	97%	A293953	L-Adenosine	95%
A347338	Arecaidine	98%	A107352	Lamivudine	98%
A320199	Brivudine	95%	A829437	L-Cytidine	95%
A137586	Capecitabine	98%	A731154	L-Guanosine	98%
A569930	Chloropurine riboside	98%	A338741	L-Inosine	95%
A370831	Cidofovir	99%	A133109	L-Uridine	98%
A410468	Cladribine	98%	A306960	Mizoribine	98%
A113960	Clevudine	98%	A1463646	Molnupiravir	98%
A195550	Clofarabine	97%	A434807	N1-Methylpseudouridine	97%
A210754	Cordycepin	98%	A205035	N4-Acetyl-2'-deoxycytidine	97% HPLC
A568740	Cytarabine	98%	A491606	N4-Benzoyl-2'-O-methylcytidine	98%
A107133	Cytidine	98%	A578027	N4-Benzoyl-5'-O-(4,4'-dimethoxytrityl)-2'-deoxycytidine	99% HPLC
A549431	Dasabuvir	98%	A192906	N4-Methylcytidine	98%
A156645	Decitabine	99%	A161306	Nelarabine	98%
A137458	Doxifluridine	98%	A426150	Pseudouridine	98%
A188531	Emtricitabine	98%	A107980	Regadenoson	98%
A948237	Entecavir	98%	A598153	Remdesivir	99%
A148639	Entecavir monohydrate	98%	A111785	Ribavirin	98%
A643497	Famciclovir	97%	A132774	S-Adenosyl-L-methionine	98%
A192433	Fialuridine	98%	A298621	Sofosbuvir	98%
A230277	Floxuridine	98%	A317604	Stavudine	95%
A175546	Fludarabine	98%	A158594	Telbivudine	98%
A103732	Fludarabine phosphate	98%	A193687	Tenofovir	95%
A918957	Galidesivir	99%	A179915	Trifluridine	98%
A200267	Ganciclovir	98%	A118999	Tubercidin	98%
A433642	Gemcitabine	98%	A135422	Uridine	98%
A309564	Gemcitabine hydrochloride	97%	A153495	Vidarabine	98%

