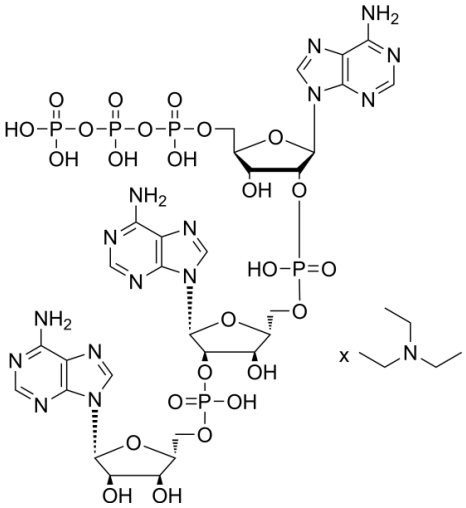
Product Data Sheet

Product Name: 2-5A TEA
Cat. No.: GC81654

Chemical Properties

Cas. No.	72351-33-8		
Formula	$C_{30}H_{40}N_{15}O_{25}P_5 \cdot xC_6H_{15}N$	M.Wt	1165.59
Solubility		Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		

Structure



Background

2-5A TEA (2′,5′-ApApA TEA) is a 5'-triphosphorylated (2',5') oligoadenylate. When covalently linked to an antisense molecule complementary to the target sequence, 2-5A TEA activates RNase L, which subsequently degrades the target RNA bound to the 2-5A TEA chimera. 2-5A TEA can be used in research related to respiratory syncytial virus infection, colorectal adenocarcinoma and melanoma [1] [2] [3].

In Vivo, 2-5A (10 µg; peritumoral injection; once daily; 3 consecutive days) TEA complexed with lipofectamine significantly inhibits MC38 colorectal carcinoma tumor growth in wild-type C57BL/6J

mice[3]. 2-5A (10 μg; peritumoral injection; once daily; 3 consecutive days) TEA complexed with lipofectamine significantly inhibits B16 melanoma tumor growth in wild-type C57BL/6J mice[3]. 2-5A (10 μg; peritumoral injection; once daily; 3 consecutive days) TEA complexed with lipofectamine significantly inhibits sgRnaseI MC38 colorectal carcinoma tumor growth in wild-type C57BL/6J mice[3]. 2-5A (10 μg; peritumoral injection; once daily; 3 consecutive days) TEA complexed with lipofectamine does not inhibit MC38 colorectal carcinoma tumor growth in RnaseI−/− mice[3].

In Vitro, 2-5A (1 μM; 4 h) TEA is imported by human HEK293T cells and BJ1 fibroblasts to activate RNase L-dependent IFN/ISG induction, while mouse MEFs, MC38 cells, BMDMs, human A549 cells, and THP-1 monocytes do not exhibit robust 2-5A TEA import activity[3].

References:
[1]. Barnard DL, et al. 2-5A-DNA conjugate inhibition of respiratory syncytial virus replication: effects of oligonucleotide structure modifications and RNA target site selection. Antiviral research. 1999 Apr;41(3):119-34.
[2]. Wang S, et al. 2-5A is an immunotransmitter that fuels RNase L immunity. Immunity. 2025 Apr 08;58(4):770-772.
[3]. Huai W, et al. OAS cross-activates RNase L intercellularly through cell-to-cell transfer of 2-5A to spread innate immunity. Immunity. 2025 Apr 08;58(4):797-810.e6.
[4]. Kalinichenko EN, et al. 3'-Fluoro-3'-deoxy analogs of 2-5A 5'-monophosphate: binding to 2-5A-dependent endoribonuclease and susceptibility to (2'-5')phosphodiesterase degradation. Biochemical and biophysical research communications. 1990 Feb 28;167(1):20-6.

Caution: Product has not been fully validated for medical applications. For research use only.
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