

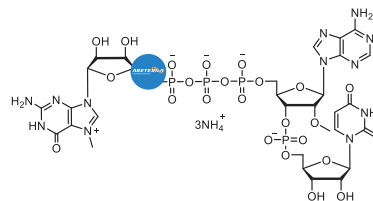
CAP1811

for self-amplifying RNA (saRNA)

PRODUCT DESCRIPTION

CAP1811 is specifically designed for self-amplifying RNAs based on the genomes of positive sense strand RNA viruses such as Venezuelan equine encephalitis virus (VEEV), Semliki forest virus (SFV), and Sindbis virus (SIN).

Areterna's novel CAP1811 is different from commercial cap analogs of AU. CAP1811 is not limited by patents and comparable to AU in saRNA transcription yield, integrity, capping rate. In addition, the resulting protein expression from the saRNA is high.



CAP m7G(5')vppp(5')(2'OMeA)pU
100mM Ammonium Solution, GMP grade
Cat. No.:GMP-CAP1811

FEATURES AND BENEFITS

- High performance & Cost effective. GMP-grade available
- Independent intellectual property rights with no patent restrictions
- High saRNA protein expression

RECOMMENDED IVT CONDITION

Component	Volume
10×Transcription Buffer	2 µl
CAP1811(100mM)	2 µl
ATP/CTP/GTP/UTP(100mM each)	2 µl each
T7 RNA Polymerase(250 U/µL)	1 µl
Inorganic Pyrophosphatase(1 U/µL)	0.04 µl
Murine RNase inhibitor(40 U/µL)	1 µl
Template DNA	1 µg
RNase free H ₂ O	Up to 20 µl

IVT PERFORMANCE

CAP1811 and m7GpppAmU cap analogs were used for saRNA co-transcription in vitro, with yield, integrity, and capping rate analyzed and compared. The results demonstrated that CAP1811 produced saRNA with high yield, high integrity, and a high capping rate during in vitro transcription.

Table 1. Transcriptional effect of CAP1811 in vitro in saRNA

Sample	Yield(mg/mL)	Integrity(%)	Capping Rate(%)
Cap1811	10.99	83.3	98.2
Cap1811	11.72	86.6	97.5
m7GpppAmU	10.91	81.6	98.4
m7GpppAmU	11.93	85.3	98.5

To evaluate the protein expression efficacy of CAP1811-capped FLuc-eGFP-saRNA in cells, HEK293T cells were transfected with FLuc-eGFP-saRNA capped with either CAP1811 or m7GpppAmU. The expression levels of eGFP and luciferase were measured at various time points. The results showed that FLuc-eGFP-saRNA capped with CAP1811 exhibited significantly higher protein expression compared to those capped with m7GpppAmU.

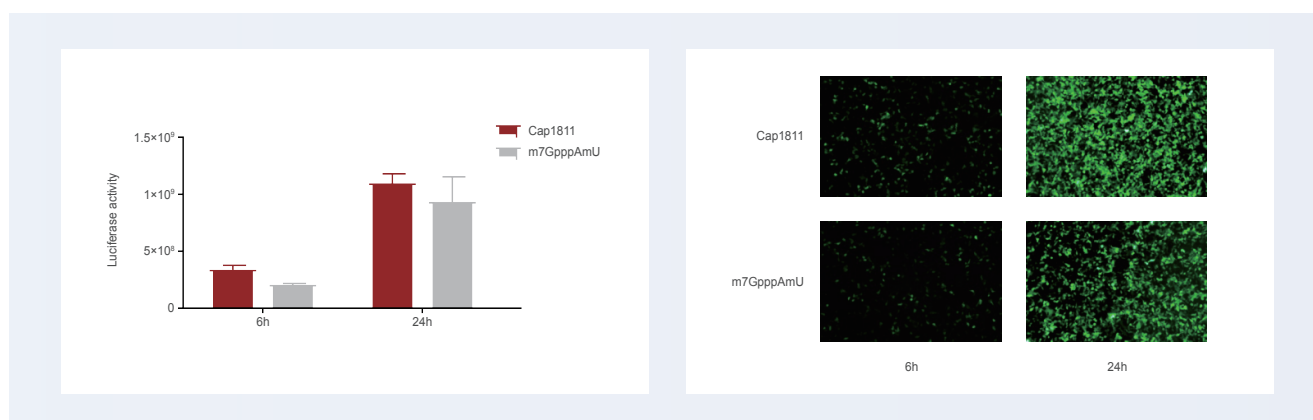
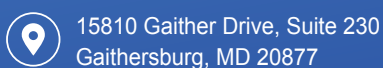


Fig 1. The protein expression efficacy of CAP1811-capped FLuc-eGFP-saRNA in HEK293T cells

CONCLUSION

The data indicates that saRNA transcribed with Areterna's CAP1811 cap analog in vitro achieves high yield, high integrity, high capping rate, and elevated saRNA protein expression. Additionally, CAP1811 has been validated and highly praised by numerous customers for its excellent performance and cost-effectiveness.



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