6 Reasons Why DuraScript™ RNA Is Better for RNAi

EPICENTRE's DuraScribe™ T7 Transcription Kit produces 2'-Fluorine-CMP and 2'-Fluorine-UMP modified RNA transcripts–called DuraScript™ RNA–that are completely resistant to RNase A digestion.[1] Recent research indicates that double-stranded DuraScript RNA provides many benefits for use in RNA interference (RNAi)†.*

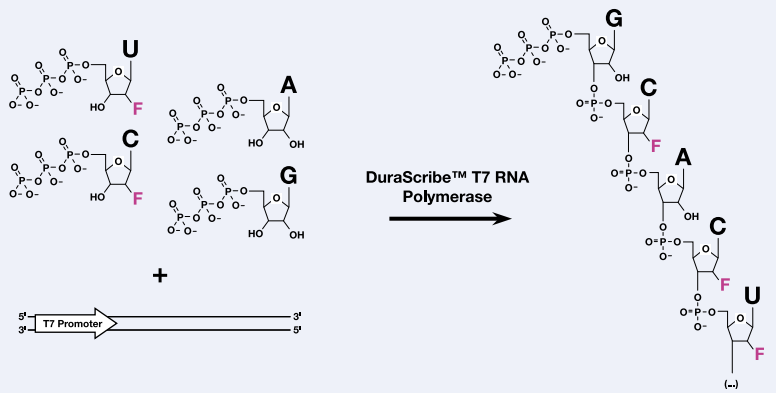

Figure 1. DuraScribe™ T7 RNA Polymerase efficiently incorporates 2'-F-CTP and 2'-F-UTP into full length DuraScript™ RNA. The presence of the fluorine at the 2'-position of the 2'-F-C and 2'-F-U nucleotides prevents RNase A digestion. The result is DuraScript™ RNA that is completely resistant to RNase A and related ribonucleases.

1. *Produce up to 50 µg of DuraScript RNA from a DuraScribe reaction.*

A standard DuraScribe reaction produces approximately 50 µg (2.5 mg/ml) of DuraScript RNA.

2. *Make DuraScript RNA from DNA templates with a standard T7 promoter.*

The DuraScribe™ T7 RNA Polymerase, provided in the kit, recognizes the same T7 transcription promoters as standard T7 RNA Polymerase but is about 100-fold more active in incorporation of 2'-fluorine-pyrimidines.

3. *DuraScript RNA is completely resistant to RNase A and the nucleases found on human hands.*

There is no need for gloves, DEPC-treatment of reagents, or RNase inhibitors when making or working with DuraScript RNA.

4. *DuraScript RNA is stable in cell culture media containing 10% fetal calf serum (Figure 2).*

5. *Double-stranded DuraScript RNA is effective for RNAi-mediated gene silencing (see sidebar).*

6. *Double-stranded DuraScript RNA has been delivered into cultured cells in the presence of serum and without the need for transfection reagents.[2]*

References

1. Meis, J.E. and Chen, F. (2002) *EPICENTRE Forum* **9** (1), 10.
2. Capodici, J. *et al*. (2002) *J. Immunol.* **169**, 5196.

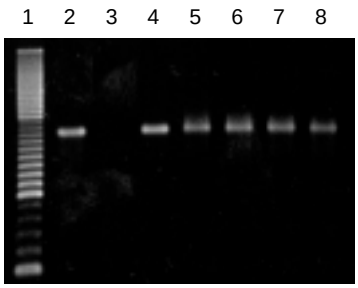

Figure 2. DuraScript™ RNA is stable in tissue culture media for at least 2 hours. Five micrograms of a 1.4-kb standard RNA transcript and a DuraScript RNA transcript were incubated in 100 µl of tissue culture media (D-MEM + 10% fetal calf serum) at 37°C. Lane 1, RNA ladder; Lane 2, standard RNA; Lane 3, standard RNA after 15 minutes in tissue culture media; Lane 4, DuraScript RNA; Lanes 5-8, DuraScript RNA after 15, 30, 60, and 120 minutes, respectively, in tissue culture media.

Double-Stranded DuraScript™ RNA Inhibits HIV-1 Infection and Can Be Delivered into Cultured Cells without the Use of Transfection Reagents

In ground-breaking work a recent publication by Capodici *et al*. demonstrated that double-stranded DuraScript™ RNA, produced using the DuraScribe™ T7 Transcription Kit and targeted to the HIV-1 *gag* gene effectively inhibited HIV replication in primary CD4+ cells. Significantly, the double-stranded DuraScript RNA was delivered into the cells in the presence of serum and without the need for transfection reagents. Canonical dsRNAs produced by *in vitro* transcription or by chemical synthesis yielded similar results but only when complexed to transfectin.

Capodici, J. *et al.* (2002) J. *Immunol.* **169**, 5196.

www.epicentre.com/durascribe.asp

DuraScribe™ T7 Transcription Kit

DS010910	10 Reactions
DS010925	25 Reactions

Contents:

DuraScribe™ T7 Enzyme Mix, DuraScribe™ T7 10X Reaction Buffer, ATP, GTP, 2'-F-CTP, 2'-F-UTP, DNase I, DTT, Control Template, and Water.

* The use of DuraScribe T7 Transcription Kit to synthesize nucleic acids with non-canonical bases or for partial ribosubstitution is covered by U.S. patents 5,849,546; 6,107,037 and other patents issued or pending. These products are accompanied by a limited non-exclusive license for the purchaser to use the purchased product(s) solely for life science research. Contact EPICENTRE concerning licenses for other uses.

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