abcam

Product datasheet

RNA Synthesis Assay Kit ab228561

2 References 2 Images

Overview

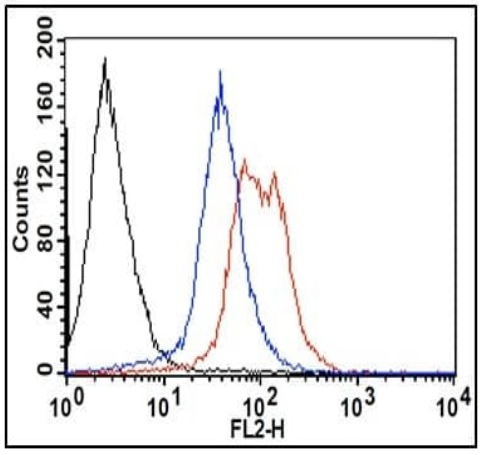
Product name	RNA Synthesis Assay Kit
Detection method	Fluorescent
Sample type	Adherent cells, Suspension cells
Assay type	Cell-based
Species reactivity	**Reacts with:** Mammals, Other species
Product overview	RNA Synthesis Assay Kit (ab228561) provides a simple and robust tool for detection of global RNA transcription temporally and spatially or changes in RNA levels directly in living cells. *De novo* synthesized RNA can be detected with a simple procedure without the use of radiolabeling or antibodies. The approach relies on the incorporation of cell permeable 5-EU (Ethynyl uridine) into nascent RNA, but not into DNA, instead of its natural uridine analog. 5-EU can be used as a replacement for BrU (5-Bromo-uridine) to measure *de novo* synthesized RNA in proliferating cells. Modified RNA is detected by click chemistry with azide-containing dye that enables for multiplex analyses with other probes, or detection of RNA-interactive proteins for deeper biological insights. The kit provides sufficient materials for 100 assays for analysis by FACS or detection by fluorescence microscope. We include Actinomycin D, an inhibitor RNA synthesis that serves as an experimental control.
Notes	This product is manufactured by BioVision, an Abcam company and was previously called K718 EZClick™ Global RNA Synthesis Assay Kit (FACS/Microscopy), Red Fluorescence. K718-100 is the same size as the 100 test size of ab228561. RNA plays crucial role in coding, decoding and regulation of genes, and protein expression in all living cells. The ability to detect newly synthesized RNA or changes in RNA levels under various physiological conditions, or resulting from disease, environmental damage, or drug treatments is an important aspect of toxicological profiling. Many anti-cancer drugs inhibit transcription, and most transcription inhibitors have useful pharmacological properties.
Platform	Flow cytometer, Fluorescence microscope

Properties

Storage instructions	Store at -20°C. Please refer to protocols.

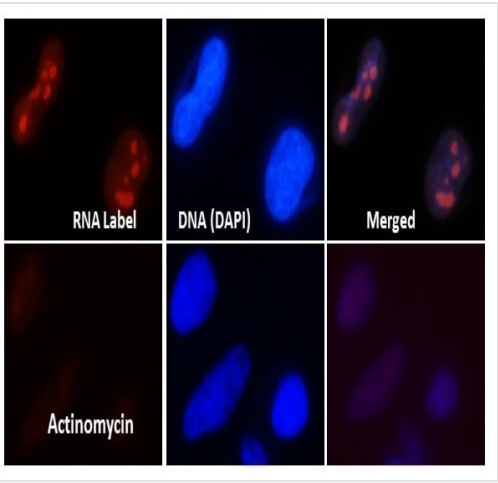
Components	100 tests
1000X DAPI	1 x 20µl
100X Actinomycin D	1 x 10µl
100X Copper Reagent	1 x 100µl
100X Fluorescent Azide I	1 x 100µl
100X RNA Label	1 x 100µl
10X Permeabilization Buffer	1 x 25ml
10X Wash Buffer IV	1 x 25ml
20X Reducing Agent	1 x 500µl
Fixative Solution I	1 x 10ml

Images



Example Data

Jurkat cells (1X10^6 cells/mL) were pre-treated with vehicle (black line) or 1 X Actinomycin D (blue line) for 4 hours at 37°C prior to 1 hour incubation with RNA Label (red line). Cells were then processed for detection of *de novo* synthesized RNA according to the included protocol. Fluorescence measured in FL-2 channel clearly shows the inhibitory effect of Actinomycin D on RNA synthesis.



Example Data

HeLa cells (10^5 cells/ mL) were pre-treated either with vehicle (top) or Actinomycin D (bottom) for 4 hours at 37°C prior to 1 hour incubation with RNA Label. *De novo* synthesized RNA was detected by Fluorescence Microscope. Reduced red fluorescence in panel B confirms the inhibitory effect of Actinomycin D on RNA biosynthesis. Nuclear staining in both panels confirms that red fluorescence is the result of RNA Label incorporation.

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