



Mouse Anti-RNA Polymerase II RPB1 monoclonal antibody, clone 9XH27 (CABT-CS001)

This product is for research use only and is not intended for diagnostic use.

PRODUCT INFORMATION

Specificity	Clone 9XH27 recognizes YSPTSPS in the C-terminal domain.
Target	RNA Polymerase II RPB1
Immunogen	Wheat germ RNA Polymerase II
Isotype	IgG2a
Source/Host	Mouse
Species Reactivity	Human, Yeast, Wheat, Mouse, <i>C. elegans</i> , <i>X. laevis</i> , most other eukaryotes
Clone	9XH27
Purification	The antibody was purified by affinity chromatography.
Conjugate	Unconjugated
Applications	ChIP, WB, ICC
Format	Liquid
Concentration	0.5 mg/ml
Size	25 µg, 100 µg
Buffer	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide.
Preservative	None

Storage

The antibody solution should be stored undiluted between 2°C and 8°C.

BACKGROUND

Introduction

RPB1 is the catalytic and largest component of RNA polymerase II, which synthesizes mRNA precursors and many functional non-coding RNAs. It forms the polymerase active center together with RPB2, the second largest subunit. Polymerase II (Pol II) is the central component of the basal RNA polymerase II transcription machinery. It is composed of mobile elements that move relatively to each other. RPB1 is part of the core element with the central large cleft, the clamp element that moves to open and close the cleft, and the jaws that are thought to grab the incoming DNA template. At the start of transcription, a single DNA template strand of the promoter is positioned within the central active site cleft of Pol II. Then, a bridging helix emanates from RPB1 and crosses the cleft near the catalytic site, which acts as a ratchet that moves the RNA-DNA hybrid through the active site by switching from straight to bent conformations during each nucleotide addition. This promotes translocation of Pol II. Pol II moves on the template during transcription elongation. Elongation is influenced by the phosphorylation status of the C-terminal domain (CTD) of Pol II's largest subunit (RPB1), which serves as a platform for assembling factors that regulate transcription initiation, elongation, termination, and mRNA processing. It can act as a RNA-dependent RNA polymerase when associated with small delta antigen of Hepatitis delta virus, being able to conform as both a replicase and transcriptase for the viral RNA circular genome.

Keywords

Polymerase II RPB1; RPB1; POLR2A; POLR2
