

## RUO DATA SHEET

# ATM

Concentrated Rabbit Monoclonal Antibody

### Intended Use:

For Research Use Only (RUO)

Epitomics' Rabbit Monoclonal Anti-Human ATM, Clone EP327, is intended for use to qualitatively identify ATM by light microscopy in sections of formalin-fixed, paraffin-embedded tissue using immunohistochemical detection methodology.

Catalog number	Description	Dilution
AC-0287RUO	0.1 ml, concentrated	1:100-1:200
AC-0287RUOB	0.5 ml, concentrated	1:100-1:200
AC-0287RUOC	1 ml, concentrated	1:100-1:200
AC-0287RUOBULK	2 ml or more, concentrated	1:100-1:200

<b>Immunogen:</b>	A synthetic peptide corresponding to residues of human ATM protein
<b>Source:</b>	Rabbit Monoclonal Antibody
<b>Clone ID:</b>	EP327
<b>Isotype:</b>	Rabbit IgG
<b>Application:</b>	Immunohistochemistry for formalin-fixed paraffin-embedded tissue

### Summary and Explanation:

ATM (ataxia telangiectasia mutated) is a serine/threonine protein kinase responsible for regulating the cell cycle checkpoint. It is predominant localized in the nucleus, associated with chromatin and nuclear matrix. ATM is recruited to sites of DNA double-strand breaks and is activated by autophosphorylation, where it functions as a tumor suppressor. ATM is responsible for the phosphorylation of key cell cycle checkpoint proteins, controlling cell fates including cell cycle arrest, apoptosis, or DNA repair.

Mutations in *ATM* was initially identified in the genetic disorder ataxiatelangiectasia, but deficiencies in ATM function are also reported in multiple tumor types, including cancers of the colon, breast, gastric, lung, and lymphoid tissues. Deficient ATM expression was associated with advanced stages of cancer, and correlated with shorter disease-free and overall survival rates. This is supported with studies observing either deletion of the *ATM* gene in chromosome 11q, or hypermethylation and silencing of the *ATM* promoter region in several cancer types that results in significant reduction or loss of tumor suppressor function downstream of ATM.

### Reagent Provided:

Antibody to ATM is affinity purified and diluted in 10 mM phosphate buffered saline (PBS), pH 7.2 containing 1% bovine serum albumin (BSA) and 0.09% sodium azide (NaN<sub>3</sub>).

### Storage and Stability:

Store at 2-8 °C. Do not use after expiration date provided on the vial. End user must validate any storage conditions other than those specified.

### Procedures Recommended:

- 1. Pretreatment:** Epitope retrieval using Tris/EDTA buffer (catalog #: SP-0004) with a pressure cooker.
- 2. Endogenous peroxidase block:** Block for 10 minutes at room temperature using peroxidase solution (catalog #: SP-0002).
- 3. Protein block:** Block for 10 minutes at room temperature using blocking solution (catalog #: SP-0003).
- 4. Primary antibody:** Incubate for 30 minutes.
- 5. Detection:** Follow instructions from the selected detection system (EpiPrecision™, a Biotin Streptavidin-HRP Detection, catalog #: DK-0001, 0003, or EpiVision™, a Rabbit Polymer Detection, catalog # DK-0002, 0004).

The antibody dilution and protocol may vary depending on the specimen preparation and specific application. Optimal conditions should be determined by the individual laboratory.

### Performance Characteristics:

This antibody gives nuclear staining in positive cells. The recommended positive control is breast for normal tissue.

### Limitations:

Immunohistochemistry is a complex process. Variation in tissue selection, tissue processing, antigen retrieval, peroxidase activity, detection systems and improper counterstaining may cause variation in results.

### References:

1. Ai L, et al.: *Cancer Epidemiol Biomarkers Prev* 2004, 13(1):150-6.
2. Austen B, et al.: *Blood* 2005, 106(9):3175-82.
3. Brennan K, et al.: *Cancer Res* 2012, 72(9):2304-13.
4. Gately DP, et al.: *Mol Biol Cell* 1998, 9(9):2361-74.
5. Kim JW, et al.: *Int J Cancer* 2014, 134(1):72-80.
6. Safar AM, et al.: *Clin Cancer Res* 2005, 11(12):4400-5.

101616 Rev. 00

