**Basic Information**

- **Catalog Number:** 19787-1-AP
- **Size:** 42 μg/150 μl
- **Source:** Rabbit
- **Isotype:** IgG
- **Purification Method:** Antigen affinity purification
- **Immunogen Catalog Number:**
- **GenBank Accession Number:** NM_001184
- **GeneID (NCBI):** 545
- **Full Name:** ataxia telangiectasia and Rad3 related
- **Calculated MW:** 301 kDa
- **Observed MW:** 250-290 kDa
- **Recommended Dilutions:**
  - WB: 1:300-1:1000
  - IP: 0.5-4.0 μg for IP and 1:200-1:1000 for WB
  - IHC: 1:50-1:500

**Applications**

- **IHC, IP, WB, ELISA**
- **Species Specificity:** human, mouse, rat
- **Cited Species:** human, mouse
- **Positive Controls:**
  - WB: HeLa cells;
  - IP: mouse testis tissue;
  - IHC: mouse testis tissue;

**Background Information**

ATR, also named as FRP1, belongs to the PI3/PI4-kinase family and ATM subfamily. ATR is a serine/threonine protein kinase which activates checkpoint signaling upon genotoxic stresses such as ionizing radiation (IR), ultraviolet light (UV), or DNA replication stalling, thereby acting as a DNA damage sensor. ATR recognizes the substrate consensus sequence [ST]-Q. ATR phosphorylates BRCA1, CHEK1, MCM2, RAD17, RPA2, SMC1 and TP53/p53, which collectively inhibit DNA replication and mitosis and promote DNA repair, recombination and apoptosis. ATR phosphorylates ‘Ser-139’ of histone variant H2AX/H2AFX at sites of DNA damage, thereby regulating DNA damage response mechanism. It is required for FANCD2 ubiquitination. It is critical for maintenance of fragile site stability and efficient regulation of centrosome duplication. ATR catalyzes the reaction: ATP + a protein = ADP + a phosphoprotein.

Defects in ATR are a cause of Seckel syndrome type 1 (SCKL1) which is a rare autosomal recessive disorder characterized by growth retardation, microcephaly with mental retardation, and a characteristic ‘bird-headed’ facial appearance. The antibody can recognize all the isoforms of ATR.

**Notable Publications**

<table>
<thead>
<tr>
<th>Author</th>
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<tbody>
<tr>
<td>Xiufang Song</td>
<td>26461628</td>
<td>Chem Res Toxicol</td>
<td>WB</td>
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<td>Mingdong Liu</td>
<td>30297842</td>
<td>Nat Commun</td>
<td>WB</td>
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<tr>
<td>S Brasil</td>
<td>24813975</td>
<td>Clin Genet</td>
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**Storage**

- **Store at:** -20ºC. Stable for one year after shipment.
- **Storage Buffer:** PBS with 0.02% sodium azide and 50% glycerol pH 7.3.
- **Aliquoting is unnecessary for -20ºC storage**
HeLa cells were subjected to SDS PAGE followed by western blot with 19787-1-AP (ATR antibody) at dilution of 1:500 incubated at room temperature for 1.5 hours.

IP result of anti-ATR(IP:19787-1-AP, 4ug; Detection:19787-1-AP 1:300) with mouse testis tissue lysate 4000 ug.

Immunohistochemistry of paraffin-embedded mouse testis tissue slide using 19787-1-AP (ATR antibody) at dilution of 1:200 (under 10x lens) heat mediated antigen retrieved with Tris-EDTA buffer(pH9).

Immunohistochemistry of paraffin-embedded mouse testis tissue slide using 19787-1-AP (ATR antibody) at dilution of 1:200 (under 40x lens) heat mediated antigen retrieved with Tris-EDTA buffer(pH9).