DNA-PKCS (G-4): sc-5282

**BACKGROUND**

The phosphatidylinositol kinase (PIK) family members fall into two distinct subgroups. The first subgroup contains proteins such as the PI 3- and PI 4-kinases and the second group comprises the PIK-related kinases. The PIK-related kinases include Atm, DNA-PKCS and FRAP. These proteins have in common a region of homology at their carboxy termini that is not present in the PI 3- and PI 4-kinases. The Atm gene is mutated in the autosomal recessive disorder ataxia telangiectasia (AT) that is characterized by cerebellar degeneration (ataxia) and the appearance of dilated blood vessels (telangiectases) in the conjunctivae of the eyes. AT cells are hypersensitive to ionizing radiation, impaired in mediating the inhibition of DNA synthesis and they display delays in p53 induction. DNA-PK is a heterotrimeric DNA binding enzyme that is composed of a large subunit, DNA-PKCS, and two smaller subunits collectively known as Ku. The loss of DNA-PK leads to defects in DSB repair and V(D)J recombination. FRAP can autophosphorylate on serine and bind to rapamycin/FKBP. FRAP is also an upstream regulator of S6 kinase and has been implicated in the regulation of p27 and p21 expression.

**CHROMOSOMAL LOCATION**

Genetic locus: PRKDC (human) mapping to 8q11.21.

**SOURCE**

DNA-PKCS (G-4) is a mouse monoclonal antibody raised against amino acids 2965-4127 of DNA-PKCS of human origin.

**PRODUCT**

Each vial contains 200 µg IgG1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

DNA-PKCS (G-4) is available conjugated to agarose (sc-5282 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-5282 HRP), 200 µg/ml, for WB, IHQ/P and ELISA; to either phycoerythrin (sc-5282 PE), fluorescein (sc-5282 FITC), Alexa Fluor® 488 (sc-5282 AF488), Alexa Fluor® 546 (sc-5282 AF546), Alexa Fluor® 594 (sc-5282 AF594) or Alexa Fluor® 647 (sc-5282 AF647), 200 µg/ml, for WB (RGB), IF, IHQ/P and FCM; and to either Alexa Fluor® 647 (sc-5282 AF647) or Alexa Fluor® 647 (sc-5282 AF647) (sc-5282 AF546), Alexa Fluor® 594 (sc-5282 AF594) or Alexa Fluor® 647 (sc-5282 AF647), 200 µg/ml, for WB (RGB), IF, IHQ/P and FCM; and to either Alexa Fluor® 680 (sc-5282 AF680) or Alexa Fluor® 790 (sc-5282 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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**APPLICATIONS**

DNA-PKCS (G-4) is recommended for detection of DNA-PKCS of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation (1-2 µg per 100-500 µg of total protein [1 ml of cell lysate]), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for DNA-PKCS siRNA (h): sc-35200, DNA-PKCS shRNA Plasmid (h): sc-35200-SH and DNA-PKCS shRNA (h) Lentiviral Particles: sc-35200-V.

Molecular Weight of DNA-PKCS: 460 kDa.

**STORAGE**

Store at 4°C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

**DATA**

DNA-PKCS (G-4) Alexa Fluor® 647: sc-5282 AF647.

Direct fluorescent western blot analysis of DNA-PKCS expression in HeLa nuclear extract (A) and MOLT-4 (B), HeLa (C) and K-562 (D) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.

DNA-PKCS (G-4) sc-5282. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear staining.

**SELECT PRODUCT CITATIONS**


**RESEARCH USE**

For research use only, not for use in diagnostic procedures.