Dyneins are multisubunit, high molecular weight ATPases that interact with microtubules to generate force by converting the chemical energy of ATP into the mechanical energy of movement. Cytoplasmic or axonemal Dynein heavy, intermediate, light and light-intermediate chains are all components of minus end-directed motors; the complex transports cellular cargos towards the central region of the cell. Axonemal Dynein motors contain one to three non-identical heavy chains and cause a sliding of microtubules in the axonemal filaments of cilia and flagella in a mechanism necessary for cilia to beat and propel the cell. Cytoplasmic Dynein is an approximately 12 subunit complex of 2 heavy chains, 2 intermediate chains to anchor Dynein to its cargo, 4 smaller intermediate chains and several light chains. It performs functions necessary for cell survival such as organelle transport and centrosome assembly. The carboxy-terminus of Dynein is important for microtubule-dependent motility and is highly conserved, while the amino-terminal regions are more variable. Several proteins regulate Dynein activity, including dynactin, LIS1 and NudEl(NudE-like).

REFERENCES

CHROMOSOMAL LOCATION
Genetic locus: DYN1C11 (human) mapping to 7q21.3, DYNC1I2 (human) mapping to 2q31.1; DynC12 (mouse) mapping to 2 C2.

SOURCE
Dynein IC1/2, cytosolic (E-9) is a mouse monoclonal antibody raised against amino acids 339-638 mapping at the C-terminus of Dynein IC1, cytosolic of human origin.

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

APPLICATIONS
Dynein IC1/2, cytosolic (E-9) is recommended for detection of Dynein IC1, cytosolic of human origin, and Dynein IC2, cytosolic of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

Molecular Weight of Dynein IC1, cytosolic: 74 kDa.
Molecular Weight of Dynein IC2, cytosolic: 72 kDa.
Positive Controls: T98G cell lysate: sc-2294, Dynein IC2, cytosolic (h2): 293 Lysate: sc-112239 or IMR-32 cell lysate: sc-2409.

RECOMMENDED SUPPORT REAGENTS
To ensure optimal results, the following support reagents are recommended:
1) Western Blotting: use m-IgG BP-HRP: sc-516102 or m-IgG BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048.
2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA

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

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

CONJUGATES
See Dynein IC1/2, cytosolic (74-1): sc-13524 for Dynein IC1/2, cytosolic antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647.