3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone 800-325-5832 • (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

ProductInformation

MONOCLONAL ANTI-RAT KAPPA (κ) LIGHT CHAIN (1a+1b)
CLONE RT-39
Mouse Ascites Fluid

Product No. **R 9010**

Monoclonal anti-Rat κ Light Chain (1a+1b) (mouse IgG1 isotype) is derived from the RT-39 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with puri-fied rat IgG. The isotype is determined using Sigma ImmunoType™ Kit (Product Code ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Product Code ISO-2).

Monoclonal anti-Rat κ Light Chain (1a+1b) recognizes an epitope located on the rat κ light chain (1a and 1b) allotypes on the various rat immunoglobulin classes and subclasses. The antibody detects the κ light chains derived from normal serum or myeloma proteins but not the rat λ chains. It localizes the denatured-reduced molecule when applied in immunoblotting. Weak cross-reaction is observed with guinea pig immunoglobulins but not with IgG preparations from human, bovine, cat, chicken, dog, goat, horse, mouse, pig, rabbit or sheep when tested by indirect ELISA. The antibody is also applicable as a secondary antibody in immunohistochemical staining of human tissue where it does not react against the tissue itself.

Monoclonal anti-Rat κ light chain (1a+1b) is a homogenous population of antibody molecules which may be used for the localization of rat κ light chains and most rat immunoglobulins using various immunochemi-cal assays such as ELISA, immunoblotting, dot blot and immunocytochemistry.

Rat immunoglobulins have either κ or λ light chains.[1] Greater than 90% of normal rat immunoglobulins and myelomas contain κ light chains. Several different κ light chain haplotypes are found among the various strains of rat[2] and such genetic polymorphism results in the presence of distinct epitopes on homologous proteins. These polymorphic determinants are called allotypes. Two different κ allotypes have been defined, 1a (also called RI-1a) and 1b (RI-1b), which differ in a large proportion (11 out of 107) of the amino acids in the constant region. The rat has been extensively used as a research model in pharmacology, oncology and the study of the immunology of aging.

Rat polyclonal and monoclonal antibodies have come into widespread use as primary antibodies.[3] Secondary antibodies to κ light chains are particularly valuable as general anti-rat immunoglobulin reagents, since they would react with >90% of rat immunoglobulins. Polyclonal anti-rat antibodies are produced by xenogeneic immunization of rabbits, goats or sheep, resulting in antibodies that cross-react with immunoglobulins of other species, unless extensively adsorbed. Monoclonal anti-rat immunoglobulins which are devoid of any binding capacity to human and many other species can therefore serve as an essential tool in many applications, especially when used as a secondary reagent in immunohistochemistry.

Reagents
The product is provided as ascites fluid with 0.1% sodium azide as a preservative.

Precautions and Disclaimer
Due to the sodium azide content a material safety sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

Product Profile
The minimum antibody titer of 1:2,000 was determined by indirect ELISA using 10 µg/ml freshly prepared rat myeloma protein containing the κ light chain coated on microtiter plates.

Note: Second antibodies against mouse immunoglobulins may cross-react with the rat protein coated on the microtiter plate unless properly adsorbed with rat immunoglobulins. In order to obtain best results in different techniques and preparations, it is recommended that each individual user determine their optimum working dilutions by titration assay.

Storage

For continuous use, store at 2-8 °C for up to one month. For extended storage freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use.

References

1. Bazin, H., et al., Eur. J. Immunol., **4**, 44 (1974).
2. Beckers, A., et al., Immunochem., **11**, 605 (1974).
3. Springer, T.A., et al., Hybridoma, **1**, 257 (1982).

Pcs7/01