

Product Information

MONOCLONAL ANTI-GREEN FLUORESCENT PROTEIN (GFP), CLONE GFP-20 Mouse Ascites Fluid

Product Number **G 6539**

Product Description

Monoclonal Anti-Green Fluorescent Protein (GFP) (mouse IgG1 isotype) is derived from the GFP-20 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from a BALB/c mouse immunized with a GFP tagged fusion protein. 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-Green Fluorescent Protein (GFP) recognizes GFP (27 kDa) using immunoblotting, dot blot and ELISA. The antibody reacts with fusion proteins expressed by prokaryotes expression vectors.

Recombinant DNA technology enables the insertion of genes of interest, to specific sequences or genes, which can provide 'affinity handles' (tags) designed to enable the selective identification and purification of the protein of interest.¹⁻⁴ The addition of a green fluorescent protein (GFP) tag to a given gene, creates a stable fusion product that does not appear to interfere with the bioactivity of the protein, or with the biodistribution of the GFP tagged product.⁵⁻⁸ GFP is a 27 kD (238 a.a.) protein, derived from the bioluminescent jellyfish *Aequorea victoria*, in which light is produced when energy is transferred from the Ca²⁺-activated photoprotein aequorin to GFP.⁹⁻¹¹ GFP is acknowledged as a unique tool to monitor dynamic processes in a variety of living cells or organisms. When expressed in either eukaryotic or prokaryotic cells and illuminated by blue or UV light, GFP yields a bright green fluorescence. Light-stimulated GFP fluorescence is species-independent and a fluorescence has been reported from many different types of GFP-expressing hosts, including microbes,¹²⁻¹⁴ invertebrates,¹⁵ vertebrates¹⁶⁻¹⁹ and plants.²⁰ Exogenous substrates and cofactors are not required for the fluorescence of GFP, since GFP autocatalytically forms a fluorescent pigment from natural amino acids present in the nascent protein.

Additionally, detection of GFP and its variants can be performed with living tissues instead of fixed samples. GFP signals can be quantified by flow cytometry, confocal scanning laser microscopy, and fluorometric assays.²¹ Indeed, many recombinant proteins have been engineered with GFP tags to facilitate the detection, isolation and purification of the proteins. The potential applications have been multiplied by the introduction of brighter GFP mutants and mutants with modified spectral properties, like the blue fluorescent protein (BFP), which allow the independent detection of BFP- and GFP- tagged proteins, even when coexpressed in the same cell. Monoclonal antibody reacting specifically with GFP may be useful in various immunotechniques,²² to identify the expression of a GFP fusion protein *in situ* and by immunoblotting, in bacteria, bacterial lysates or cells and tissues transfected with a GFP fusion protein expressing vectors. It may also be used to correlate levels of GFP protein expression with fluorescence intensity and for immunoprecipitation of GFP fusion proteins.

Reagents

The product is supplied as ascites fluid with 15 mM 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 hazards and safe handling practices.

Storage/Stability

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. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

A minimum working dilution of 1:2,000 is determined by immunoblotting, using a purified recombinant GFP preparation.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working dilution by titration test.

References

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