

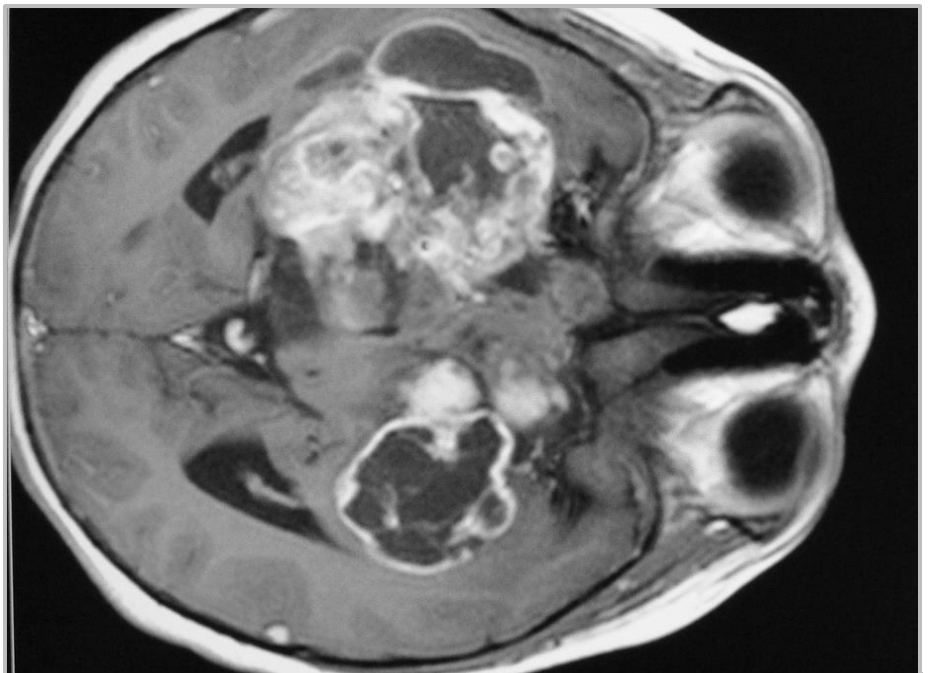
## TECHNOLOGY OFFERS

# Diagnostic and Prognostic Marker for Glioma Treatment (P-897)

*A novel monoclonal antibody against neurofibromin 1, for fast and reliable detection of tumor cells by IHC and Western Blot analysis.*

### EXECUTIVE SUMMARY

The inventors established a monoclonal antibody against neurofibromin 1. Neurofibromin 1 (neurofibromatosis, von Recklinghausen disease, Watson disease) Mutations linked to neurofibromatosis type 1 led to the identification of NF1. NF1 encodes the protein neurofibromin, which appears to be a negative regulator of the ras signal transduction pathway. In addition to type 1 neurofibromatosis, mutations in NF1 can also lead to juvenile myelomonocytic leukemia. Alternatively spliced NF1 mRNA transcripts have been isolated, although their functional differences, if any, remain unclear. Mouse monoclonal antibody raised against a partial recombinant NF1. Synonyms: DKFZp686J1293, NFNS, VRNF, WSS.



Griselda Ramírez,

<https://www.flickr.com/photos/56088233@N08/5527692039>, CCBYSA2.0.

#### Category

Diagnostics

#### Indication

Brain Cancer

#### Development stage

Hit

#### Seeking

Licensing, Development partner

### BENEFITS

- Monoclonal antibody against neurofibromin
- Proof of concept established with biopsy material
- Fast, reliable & ready to use
- The antibody allows the fast and reliable detection of tumor cells by immunohistochemistry (IHC) and Western Blot analysis.

## TECHNOLOGY BACKGROUND

Neurofibromatosis type 1 (NF-1) is among the most common inherited diseases affecting cells of the central and peripheral nervous systems. A region of the NF-1 gene is similar in sequence to the ras-GTPase activator protein (ras-GAP), and investigations have confirmed that the NF1 gene product (now known as neurofibromin) stimulates ras-GTPase activity *in vitro and in vivo*. Neurofibromin modulates the ability of ras proteins to regulate cellular proliferation and/or differentiation, suggesting a possible role in normal development. Neurofibromatosis type 1 (NF1) is a hereditary condition commonly associated with multiple café-au-lait spots on the skin. Café-au-lait spots are light brown in color, like the color of “coffee with milk.”. People with NF1 also tend to develop varying numbers of neurofibromas (benign [noncancerous] tumors of the covering of the nerves). Neurofibromas are often seen as raised bumps on the skin and can occur anywhere on the body. Plexiform neurofibromas are also benign tumors. However, these can grow quite large and can cause significant medical problems

## DEVELOPMENT STAGE

The antibody was manufactured by Gerhard Moldenhauer at DKFZ and is ready to use. Proof of concept of marker established with biology material.

## APPLICATIONS

- Antibody for research use
- Diagnostic and Prognostic Marker for Glioma Treatment (N terminal antibody: mAb NF1-5.16)

## INTELLECTUAL PROPERTY

No Patent.

## PUBLICATIONS & REFERENCES

- “Proteasomal and genetic inactivation of the NF1 tumor suppressor in gliomagenesis.” In [Cancer Cell. 2009 Jul 7;16\(1\):44-54](#), by McGillicuddy LT, Fromm JA, Hollstein PE, Kubek S, Beroukhim R, De Raedt T, Johnson BW, Williams SM, Nghiemphu P, Liao LM, Cloughesy TF, Mischel PS, Parret A, Seiler J, Moldenhauer G, Scheffzek K, StemmerRachamimov AO, Sawyers CL, Brennan C, Messiaen L, Mellinghoff IK, Cichowski K.

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## ABOUT THE DKFZ INNOVATION MANAGEMENT

Working at the interface of research and industry, the Innovation Management of the German Cancer Research Center (DKFZ) helps to get new cancer medications, diagnostic tests, and research instruments onto the market as quickly as possible.

The DKFZ with its more than 3,000 employees is the largest biomedical research institution in Germany. At the Center more than 1,300 scientists investigate how cancer develops, identify cancer risk factors and endeavor to find new strategies to prevent people from getting cancer. They develop novel approaches to make tumor diagnosis more precise and treatment of cancer patients more successful. DKFZ is a member of the Helmholtz Association of National Research Centers, with ninety percent of its funding coming from the German Federal Ministry of Education and Research and the remaining ten percent from the State of Baden-Württemberg