

Paper Title (Identifier PAT045)

Diagnostic and therapeutic potential of a human antibody cloned from a cancer patient that binds to a tumor-specific variant of transcription factor TATA-binding protein-associated factor 15

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About the paper

This study describes investigations on the target of fully human monoclonal IgG antibody PAT-BA4, a RNA binding protein called TAF15, and the potential for use of PAT-BA4 as a diagnostic and therapeutic tool.

Background

Several natural human antibodies and their antigens have been described. IgM's represent the major group about 99% of which only a small percentage are IgG or IgA. The discovery of this potent natural human IgG antibody and its unique properties suggests that IgGs may play a distinct but important role in innate immunity.

Protocol

Transient knockdown experiments with siRNA were used to validate TAF15 as the PAT-BA4 target protein. In addition western blot analysis was used to determine the binding patterns of TAF15 protein on purified BxPC3 pancreatic cancer cell extracts. Human tissues – healthy, cancerous and metastatic – were tested for the presence of the PAT-BA4 specific variant of TAF15 by immunohistochemistry. Cell spreading and motility experiments were performed to determine if PAT-BA4 was able to influence these malignant processes.

Results

The study confirmed that the PAT-BA4 specific variant of TAF15 is not present on normal tissues, including stomach, uterus, lung, breast, colon and prostate. It was also shown that TAF15 is over-expressed in malignant cells on the protein level and on the mRNA level. The results also confirm that PAT-BA4 inhibits the migration of tumour cells by blocking tumour cell movement.

Conclusions

The unique, expression of the PAT-BA4 specific variant of TAF15 makes the PAT-BA4 antibody an ideal diagnostic and therapeutic tool.

Interesting facts

- TAF15 is a novel therapeutic target for use in cancer
- The target of PAT-BA4 is present on cancer cells, but not healthy cells
- PAT-BA4 inhibits the migration of tumour cells by blocking tumour cell movement

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