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DIAGNOSTIC MARKER AND THERAPEUTIC TARGET FOR EWING'S SARCOMA

DIAGNOSTICS

Highly specific gene-based biomarker for the diagnosis of Ewing's sarcoma.

TECHNOLOGY TYPE

Biomarkers
Therapeutics
Oncology
Ewing's Sarcoma

STAGE OF DEVELOPMENT

- Tests showing sensitivity and specificity of NKX2.2 for Ewing's sarcoma underway.
- Ongoing work to study potential NKX2.2 inhibitors.

IP PROTECTION

U.S. Utility Patent Issued

Methods and Compositions
for the Diagnosis and
Treatment of Ewing's
Sarcoma
US7939253B2

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Reference Number: U-4178

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TECHNOLOGY SUMMARY

Ewing's Sarcoma is an aggressive and highly metastatic bone or soft tissue associated tumor in children and young adults. These tumors frequently progress undetected until they metastasize, whereupon the mortality of the disease greatly increases. Identifying Ewing's tumors typically involves detection of CD99 and EWS/FLI expression that have limited sensitivity and specificity.

Gene ontology (GO) analysis and subsequent studies in tumor tissues has verified NKX2.2 gene or protein expression as an important contributor to the neural characteristics of the tumor. The invention describes a quantitative approach to measuring NKX2.2 expression as a sensitive approach to diagnosing Ewing's tumors. Additional biology studies have shown that blocking NKX2.2 expression causes Ewing's Sarcoma cells to lose their oncogenic phenotype, which suggests additional therapeutic applications.

FEATURES AND BENEFITS

- Early biomarker for detection of Ewing's sarcoma.
- Rapid and sensitive qPCR-based test.
- Can be added to other gene panels for multiplex testing for other biomarkers or cancer types.

RECENT PUBLICATIONS

Fadul, J., Bell, R., Hoffman, L.M., Beckerle, M.C., Engel, M.E., Lessnick, S.L. (2015). EWS/FLI utilizes NKX2-2 to repress mesenchymal features of Ewing sarcoma. *Genes & Cancer*. 6(3-4): 129-143.
doi: [10.18632/genesandcancer.57](https://doi.org/10.18632/genesandcancer.57)

INVENTOR PROFILE

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