ELTD1

Towner et al., used advanced data mining and a novel bioinformatics method to predict ELTD1 as a potential novel glioma biomarker.

Validation was done with immunohistochemistry, which was used to detect levels of ELTD1 in human high-grade gliomas and rat F98 glioma tumors. In vivo levels of ELTD1 in rat F98 gliomas were assessed using molecular magnetic resonance imaging.

ELTD1 was found to be significantly higher (P = .03) in high-grade gliomas (50 patients) compared with low-grade gliomas (21 patients) and compared well with traditional immunohistochemistry markers including vascular endothelial growth factor, glucose transporter 1, carbonic anhydrase IX, and hypoxia-inducible factor 1α. ELTD1 gene expression indicates an association with grade, survival across grade, and an increase in the mesenchymal subtype. Significantly high (P < .001) in vivo levels of ELTD1 were additionally found in F98 tumors compared with normal brain tissue.

Results of this study strongly suggests that associative analysis was able to accurately identify ELTD1 as a putative glioma-associated biomarker. The detection of ELTD1 was also validated in both rodent and human gliomas and may serve as an additional biomarker for gliomas in preclinical and clinical diagnosis of gliomas [1].

1)
Towner RA, Jensen RL, Colman H, Vaillant B, Smith N, Casteel R, Saunders D, Gillespie DL, Silasi-Mansat R, Lupu F, Giles CB, Wren JD. ELTD1, a potential new biomarker for gliomas. Neurosurgery. 2013 Jan;72(1):77-90; discussion 91. doi: 10.1227/NEU.0b013e318276b29d. PubMed PMID: 23096411; PubMed Central PMCID: PMC3555701.