**Title:** Differential protein expression analysis between grade III and grade IV Glioma by a 2D-DIGE technique

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**Abstract:** Oncoproteomics is increasingly employed in both neurological and oncological biology research to provide insight into molecular basis of disease but rarely achieve coherence. Brain Glioma are the most common primary human brain malignant tumors and diffuse Gliomas are highly invasive, heterogeneous and respond poorly to treatments. Differential protein expression between various pathological grades of malignant Gliomas has been shown in studies of Glioma proteomics. For comparative proteomic analysis, samples selected from high grade (III and IV) Glioma and tumor's proteins were extracted. We separated proteins by 2D-DIGE technique and the spots were then analyzed and compared using specific software, after providing 3D images of spots alteration. Results revealing approximately 800 protein spots by 2D-PAGE, including spots increased and decreased expression. Comparison of grade III and grade IV Glioma revealed 448 differentially expressed and statistically significant (p < 0.05) protein spots. Proteins play active roles in biology and metabolic pathways through their effect on tumor cell proliferation, tumor differentiation, tumor malignancy, metastasis and cell death.

Proteomics, Glioma, 2D-DIGE and Brain Tumor

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