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Anti-thrombin as a prognostic biomarker candidate for patients with recurrent glioblastoma multiform under treatment with perillyl alcohol.

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Perillyl alcohol (POH) is a naturally occurring monoterpene with antiangiogenic and anti-tumoral properties. This chemotherapeutic agent has proven effectiveness in several clinical trials, including an ongoing phase I, comprising patients with recurrent glioblastoma multiform (GBM) under treatment with POH by intranasal administration. Proteomics offers tools to distinguish states of biological systems according to protein expression differences and therefore, can be used to gain pathological insights and to search for disease follow-up biomarkers. In this work, a differential gel electrophoresis (DIGE) proteomic approach was used to search for plasma proteins that correlated with the disease progression in 10 of these patients. Our results pointed antithrombin (down) and fibrinogen (up) regulated after a four months treatment deserving to be further verified as prognostic markers for this treatment. Possible links between tumor progression and anti-thrombin expression level are also discussed.

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