isolated from the tunicate *Ecteinascidia turbinata*, down-regulates HMGA1 and E2F1, as well as its downstream targets Vimentin and ZEB1 in sensitive myxoid liposarcoma cells, suggesting a critical role of the transcriptional complex HMGA1/E2F1 in the regulation of the mesenchymal compartment. These data were further confirmed *in vivo* by the IHC analysis of myxoid sarcoma specimens derived from patients that received trabectedin therapy before surgery. On the other hand, trabectedin treatment down-regulates the activity of HER3 receptor that in turn inhibits Nf-kB pathway in sensitive myxoid liposarcoma cells but not in resistant counterpart cells demonstrating that the activation of Nf-kB pathway is involved in the mechanisms of drug resistance.

Conclusions: Overall, our data suggest that HMGA1 may represent a new biomarker of liposarcoma progression and that it could be a new potential therapeutic target for the more aggressive liposarcoma subtypes.

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1689P HMGA1 is a new biomarker of liposarcoma progression

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Background: Liposarcoma (LPS) is the most common type of soft-tissue sarcoma that includes a heterogeneous class of tumors classified according to histologic appearances, protein expression pattern and molecular genetics. Molecular subtyping is not only important for accurate diagnosis but may be necessary as a basis for the identification of therapeutic targets. Lipoma is characterized by extensive High Mobility Group A1 (HMGA1) protein aberrations suggesting a role of this protein in the mechanisms of liposarcoma progression as well as previously demonstrated in other tumors.

Methods: Cell lines derived from different liposarcoma subtypes and a cohort of 68 patients were used to analyze in vitro and in vivo the role of HMGA1 in liposarcoma progression.

Results: Our data revealed that HMGA1 is highly expressed in liposarcoma cell lines and that is strongly involved in the mechanism of cell proliferation, mobility and invasion of this subtype of tumor. The *in vitro* results were confirmed *in vivo* by the RT-PCR and IHC analyses of 68 specimens of different subtypes of liposarcoma derived from patients surgically treated at Regina Elena National Cancer Institute. The aggressive subtypes de-differentiated and myxoid liposarcoma showed higher HMGA1 levels than well-differentiated liposarcoma. Furthermore, trabectedin, a marine alkaloid