**Conference Presentation**

**Viscum album (L) extracts in cancer treatment: a systematic review of in vitro and in vivo studies**

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**Abstract**

**Background:** Several reviews about phytotherapy and homeopathy have been published in the last years, including *Viscum album* (VA.L). VA is a parasite plant whose extract has anti-cancer proprieties and is used alone or in combination with conventional chemotherapy.

**Methods:** We performed a systematic review about the in vivo and in vitro models described in the literature, including veterinary clinical trials. The literature was consulted from Pubmed database.

**Results:** There are several kinds of pharmaceutical preparations about VA and their active principles used in experimental studies, lectin being frequently studied (alone or as an extract compound). More than 50% of available literature about VA is related to the lectin effects. On the other hand, the effects of viscotoxins are less studied. Among the in vivo experimental studies about VA and its compounds, the B16 murine melanoma is the most used model, followed by Ehrlich, Walker and Dalton tumors. The results point to the apoptotic effects, metastasis control and tumor regression. Some veterinary clinical studies about the use of VA in the treatment of sarcoid, fibrosarcoma and neuroblastoma are quoted in literature too, with interesting results. Considering the in vitro models, our review revealed that NALM6 leukemia cells, B16 melanoma and NC1-H460 lung carcinoma were the most studied tumor models, apoptosis signals being the most important findings. Only one study verified immunoglobulin and interleukin production. All consulted papers were related to phytotherapy preparations only.

**Conclusions:** Although the literature about the anti-cancer activity of VA extract and its lectins is enough, there is a marked lack of information about viscotoxin activities and about the effects of homeopathic preparations of this plant on animal tumors and on in vitro cultivated tumor cells.

**Keywords:** *Viscum album*, cancer, lectin, viscotoxin, apoptosis, experimental models

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