

ABSTRACT

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High-diluted preparations from *Viscum album* decrease nitric oxide levels produced by murine melanoma cells

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It has been demonstrated that aggressive tumor cells exhibit a greater capacity for migration and increase the production of nitric oxide (NO) [1]. Recently, our group demonstrated that ultra-diluted preparations of *Viscum album* (Va) mother tinctures reduced clinical manifestations related to cancer fatigue in melanoma-bearing mice [2]. Since the loss of quality of life in cancer patients is often linked to tumor aggressiveness, this study aimed to evaluate the effects of ultra-diluted Va mother tincture on the *in vitro* migration potential and NO production of B16F10 melanoma cells. For this purpose, cells were treated for 24h with the vehicles (ultrapure water, filtered and dynamized at the corresponding potency) or with the Va mother tincture derived from the host tree *Quercus robur*, collected in the Swiss summer (TM-VaQrV) or with ultra-dilutions of TM-VaQrV, at 12X, 200C, and 5LM potencies. Cell migration was assessed using wound healing assays, while NO levels in the culture supernatant were quantified at 24 and 48 hours by ozone-chemiluminescence technology using a NO analyzer. Additionally, the collagen fiber content in tumor biopsies from melanoma-bearing mice treated with these medications was analyzed using Picosirius staining and quantified using ImageJ software. The results revealed no significant differences in B16F10 cell migration or collagen fiber percentage in tumors following treatment with Va ultra-dilutions. However, treatment with 12X and 5LM potencies led to a significant reduction in NO levels compared to vehicle-treated cells. Overall, these findings suggest that while TM-VaQrV ultra-dilutions do not alter the migratory capacity of B16F10 cells or the composition of the tumor stroma, they do reduce NO production, which may correlate with decreased tumor aggressiveness. Further studies are required to elucidate the mechanism underlying the effects of 12X and 5LM ultra-dilutions in their potential role in modulating melanoma cell behavior.

Keywords: Metastasis, homeopathic dilutions, *Quercus robur*, cellular migration, NO.

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References

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