# A tricin derivative from deschampsia antarctica desv. Inhibits colorectal carcinoma growth and liver metastasis through the induction of a specific immune response

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In colorectal carcinoma patients, distant metastatic disease is present at initial diagnosis in nearly 25% of them. The majority of patients with metastatic colorectal carcinoma have incurable disease; therefore, new therapies are needed. Agents derived from medicinal plants have already demonstrated therapeutic activities in human cancer cells. Antartina is an antitumor agent isolated from Deschampsia antarctica Desv. This study aimed to evaluate the antitumor properties of Antartina in colorectal carcinoma models. We used human and murine colorectal carcinoma cell lines for investigating proliferation, apoptosis, and cell-cycle effects of Antartina therapy in vitro.

Avatar and immunocompetent colorectal carcinoma animal models were applied for evaluating the effects of Antartina in vivo. Immune response against colorectal carcinoma model was investigated using CTL assay, analyzing dendritic cell activation and intratumor T-cell subpopulation, and by tumor rechallenge experiments. Antartina inhibits in vitro human colorectal carcinoma cell proliferation; however, in vivo experiments in Avatar colorectal carcinoma model Antartina display a limited antitumor effect. In an immunocompetent colorectal carcinoma mice model, Antartina potently inhibited tumor growth and liver metastases, leading to complete tumor regressions in >30% of mice and increased animal survival. In addition, Antartina induced a potent specific cytotoxic T-cell response against colorectal carcinoma and a long-lasting antitumor immunity. Interestingly, Antartina increased tumor immunogenicity and stimulated dendritic cell activation. No toxic effects were observed at the doses employed. Our findings showed that Antartina has the ability to induce antitumor immunity against colorectal carcinoma and can be used to develop new tools for the treatment of colorectal carcinoma. 