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## Abstract

# Avemar inhibits the growth of mouse and human xenograft mammary carcinomas comparable to endocrine treatments

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**Background:** An *in vitro* study demonstrated that Avemar increased the effect of Tamoxifen on MCF7 (ER+) mammary carcinoma cells. **Methods:** MXT (ER+) mouse mammary tumor tissue was transplanted s.c. into BDF<sub>1</sub> mice. The tumor bearing animals were treated p.o. with Avemar. Then the most effective Avemar dose (3.0 g/kg), Tamoxifen (0.5 mg/kg s.c.), Examestane (10 mg/kg i.p.) and Anastrozol (5 mg/kg i.p.) monotherapies and their combinations with Avemar was compared. All treatments were given once daily, for 10 days, starting 7 days after the tumor transplantation. The same experimental schedule was repeated using T47/D (ER+) human breast carcinoma cell lines transplanted into C.B-17/Icr-scid/scid mouse. Finally, the growth of T47/D and MDA-MB-231 (ER-) xenografts treated by Avemar was compared. Tumor volume was measured up to 25 days after transplantation in MXT and 55 days in xenograft. **Results:** In MXT model all monotherapies and combinations led to retardation of tumor growth. Combination of Avemar with any of the endocrine treatment enhanced the efficacy compared to endocrine monotherapy. Out of the four monotherapies the best result was achieved by Avemar (50% inhibition). The combination of Avemar with Examestane increased the tumor growth inhibition to 60.4% compared to control. The other treatments did not exceed the effect of Avemar monotherapy. In xenograft model Avemar produced 50% tumor growth inhibition compared to control and was more effective than the other treatments Examestane (26%), Anastrozol (25%) or Tamoxifen (42%). Combined treatment with Avemar always improved efficacy within the range of 3–10%. Avemar showed similar efficacy when T47/D (49%) and MDA-MB-231 (52%) xenografts were compared. **Conclusions:** The tumor growth inhibitory effect of Avemar on ER positive MXT mouse breast carcinoma as well as in T47/D xenograft models are comparable (equal or better) to standard endocrine treatments. Avemar certainly did not reduce the effect of endocrine treatments. The antitumor activity of Avemar did not depend on the estrogen receptor status.

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