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¹ Unconventional therapy
² Antiangiogenetic agent

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² *Carcharhinus dussumieri*³ Pre tumor establishment⁴ Post tumor establishment¹ 7,12 Dimethyl benz[α]anthracene

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¹ Drug Treated Diet

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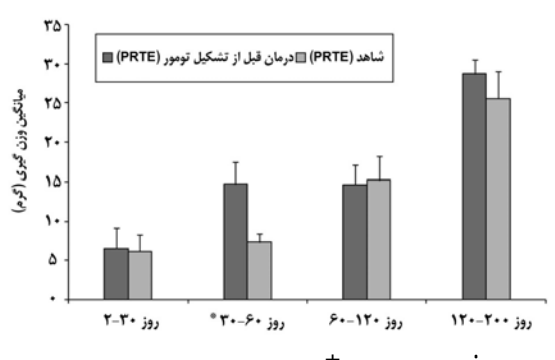
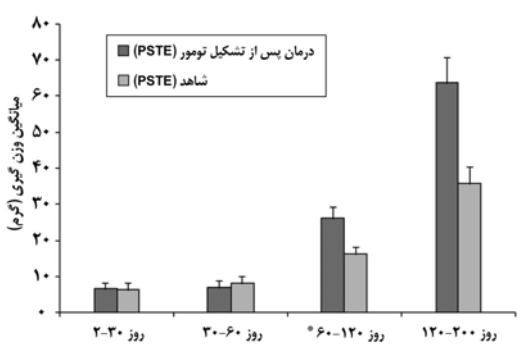
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References:

- 1-Ernest E, Casileth BR. How useful are unconventional cancer treatment? *Eur J Can* 1999; 35: 1608-13.
2. Folkman J. Tumor angiogenesis: Therapeutic implications. *New Eng J Med* 1971; 285: 1182-6.
3. Lane IW. Sharks don't get cancer. Avery publishing group Inc. New York, 1993.
4. Ostrander GK, Loprinzi CI. Sharks do get cancer: Few surprises in cartilage research. *J Natr Can Ins* 2005; 97: 1562-3.
5. Ostrander GK, cheng KC, Wolf JC, et al. Shark Cartilage, Cancer and the growing treat of pseudoscience. *Cancer Res* 2004; 64: 8485-91.
6. Brem H, Folkman J. Inhibition of tumor angiogenesis mediated by cartilage. *J Exp Med* 1975; 141: 427-30.
7. Langer R, Berm H, Falterman K, et al. Isolation of a cartilage factor that inhibits tumor neovascularization. *Science* 1976; 195: 10.
8. Sheu JR, Fu CC, Tsai ML, et al. Effect of U995, a potential shark cartilage derived angiogenesis inhibitor, on anti-angiogenesis and anti-tumor activities. *Anticancer Res* 1998; 18: 4435-41.
9. Deplanque G, Harris Al. Antiangiogenic agent; clinical trial design and therapies in development. *Eur J Cancer* 2000; 36: 1713-24.
10. Gonzales RP, leyva A, Moreas Mo. Shark cartilage as source of antiangiogenic compounds: From basic to clinical research. *Biol Pharm Bull* 2001; 24: 1097-101.
11. Begenal FS, Easton DF, Harris E, et al. Survival of patient with breast cancer attending Bristol Cancer Help Centre. *Lancet* 1990; 336: 606-10.
12. Miller DR, Anderson GT, Stack JS, et al. Phase I/II trial of the safety and efficacy of shark cartilage in the treatment of advanced cancer. *J Clin Oncol* 1998; 16: 3649-55.
13. Loprinzi LC, levith R, Barton DL, et al. Evaluation of shark cartilage in patient with advanced cancer. *Cancer* 2005; 104: 176-82.
14. Costa I, Solanas M, Escrich E. Histopathological characterization of mammary neoplastic lesions induced with 7,12-Dimethyl Benz[a]Anthracene in the rat. *Arch Pathol Lab Med* 2002; 126: 915-27.
15. New man V, Rock CI, Faerber S, et al. Dietary supplement use by women at risk for breast cancer recurrence. *J Amer Diet Asso* 1998; 98: 285-92.
16. Zuhair MH, Feyzi R, Sheikhian A, et al. Low molecular weight fraction of shark cartilage can modulate immune response and abolish angiogenesis. *Int Immunopharmacol* 2005; 5: 961-70.
17. Horseman MR, Alsner J, Overgaard J. The effect of shark cartilage extracts on the growth and metastatic spread of the SCCVII carcinoma. *Acta Oncol* 1998; 37: 441-5.
18. Kern BE, Balkon JH, Antonio BA, et al. Troponin I Peptide (Glu94-Leu 123), a cartilage-derived angiogenesis inhibitor: in vitro and in vivo effects on human endothelial cells and on pancreatic cancer. *J Gastro Surg* 2003; 7: 961-9.