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# Paclitaxel administration along with antiangiogenic therapy in hnscc xenograft model

**Language:** English

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## Introduction

Angiogenesis is essential for tumor growth and progression [2,6,7]. In head and neck cancer a tight correlation for angiogenesis and tumor progression has been demonstrated. This study was conducted to evaluate if there are additive therapeutic effects combining Paclitaxel with the angiogenesis inhibitor TNP-470 in a mouse model for head and neck cancer.

## Material and Methods

NMRI nude mice were inoculated with HNSCC-001 cell line [4]. After 4 weeks of tumor establishment 4 mice were injected with TNP-470 s.c. (30 mg/kg) and Paclitaxel i.p (25 mg/kg) every other day for 12 days while 4 control mice received vehicle injections only. The tumor volume and body weight was measured every other day up to day 15, when all mice were sacrificed. Tumor volume was calculated by using the standard formula: a x b2 x 0,52 where a is the longest diameter and b is the shortest diameter. Tumor volume is also expressed by the ratio of mean tumor volume in treated animals to mean tumor volume in the control animals (T:C ratio). The T:C ratio before treatment was 1,2.

Table 1: Tumor volume by formula V=a x b2 x 0,52 [$cm^3$].

| | day 0 | day 4 | day 6 | day 8 | day 10 | day 12 | day 15 |
|---|---|---|---|---|---|---|---|
| Taxol/TNP 470 | 186 | 207 | 165 | 151 | 145 | 107 | 134 |
| Control | 160 | 210 | 236 | 344 | 421 | 571 | 739 |
| SF Taxol/TNP 470 | 42 | 92 | 83 | 74 | 75 | 52 | 55 |
| SF Control | 25 | 13 | 13 | 36 | 34 | 76 | 60 |
| t-Test | 0,33955 | 0,94723 | 0,14241 | 0,00320 | 0,00054 | 0,00006 | 0,00001 |

Table 2: Body weight [g].

| | day 0 | day 4 | day 6 | day 8 | day 10 | day 12 | day 15 |
|---|---|---|---|---|---|---|---|
| Taxol/TNP 470 | 29,00 | 31,00 | 31,00 | 31,25 | 31,25 | 30,75 | 30,75 |
| Control | 28,50 | 30,00 | 28,75 | 25,75 | 24,75 | 23,00 | 22,25 |
| SF Taxol/TNP 470 | 2,94 | 2,58 | 3,92 | 2,99 | 3,59 | 3,50 | 3,50 |
| SF Control | 1,29 | 2,31 | 2,36 | 2,22 | 3,30 | 2,83 | 2,50 |
| t-Test | 0,76626 | 0,58470 | 0,36315 | 0,02536 | 0,03738 | 0,01373 | 0,00752 |

Table 3: Ratio of Tumor-Volume T/C.

| | day 0 | day 4 | day 6 | day 8 | day 10 | day 12 | day 15 |
|---|---|---|---|---|---|---|---|
| Tumor Volume T/C | 1,16 | 1,06 | 0,83 | 0,63 | 0,56 | 0,44 | 0,44 |
| SF | 0,26 | 0,46 | 0,46 | 0,48 | 0,51 | 0,56 | 0,56 |

## Results

Significant differences in tumor volume could be observed from day 8 of treatment. On day 15 the tumor volume (Table 1) was 739 ± 60 $mm^3$ in the vehicle-treated group and 136 ± 55 $mm^3$ in the TNP-470/Paclitaxel treated group (p=0,00001). On day 15 the body weight (Table 2) in the control group was 22,3 ± 2,5 g and 30,8 ± 3,5 g in the TNP-470/Paclitaxel group (p=0,008). The T:C ratio decreased gradually during the experiment, from 1,2 before treatment to 0,4 on day 15 when the animals were sacrificed (Table 3). Neither in treatment nor in control group metastasis could be detected macroscopically and in histological examination.

Figure 1:

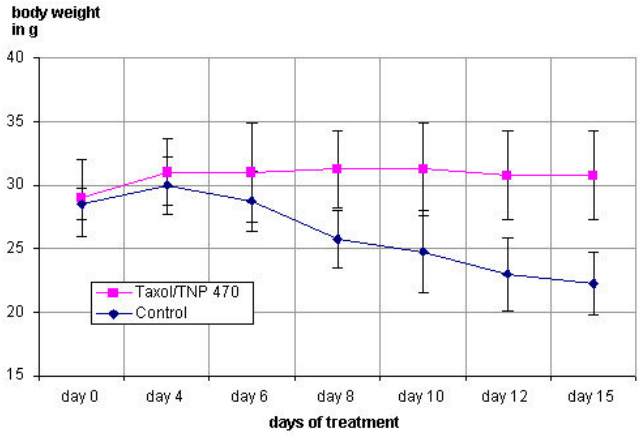



Figure 2:

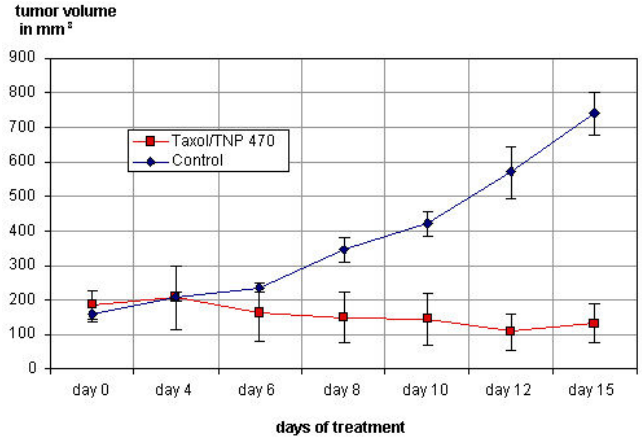
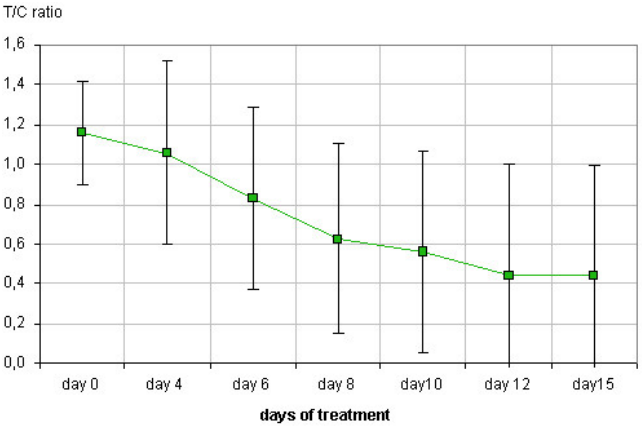



Figure 3:




## Conclusion

Previous studies have demonstrated that taxanes as well as TNP-470 can decrease tumor progression in xenograft models [1,3,5,8]. The tumor volume was repressed in nude mice bearing human head and neck cancer by the combination of TNP-470 and Paclitaxel. Further investigation of this combination is warranted.

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*This Poster was submitted by Dr. Christian Küttner.*

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**Poster Faksimile:**

# PACLITAXEL ADMINISTRATION ALONG WITH ANTI-ANGIOGENIC THERAPY IN HNSCC XENOGRAFT MODEL

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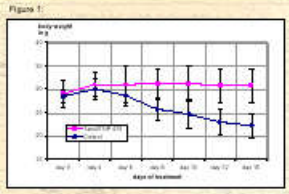

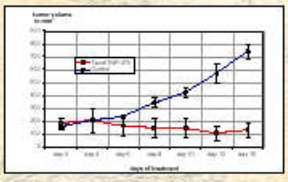

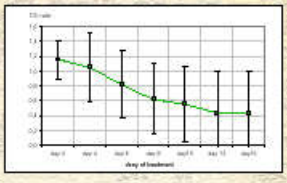

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