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ANTI-TUMOR EFFECTS OF IPET-S (WITH TAHEEBO) ON CANCER-BEARING DOGS

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TAHEEBO, contained in IPET-S, is a polyphenol extract from the bignoniaceae tabebuia avellanedae tree that grows natively in Brazil. Taheebo includes NQ801, an active component that not only inhibits the growth of cancer cells, but also presents selective toxicity that does not affect normal cells. Patents have been awarded in four countries, and the extract is used widely as a complementary and alternative medicine for cancer treatment in humans. Tohoku Fukushi University professor Dr. Takusaburo Ebina (formerly of the Miyagi Cancer Center) published a journal article describing the metastasis invasion inhibition effect of Taheebo on cancer cells, Taheebo's apoptosis induction, and antiangiogenic effect. University of Sao Paulo honorary professor Dr. Walter Radames Accorsi, a noted scholar on South American medicinal plants, reported that his research showed Taheebo to demonstrate a variety of effects in addition to anti-cancer properties, such as anti-inflammatory, analgesic, and diuretic properties.

We studied the effects of IPET-S containing Taheebo NQ801 on small animals in a clinical setting in 2010.We reported this same anti-tumor and underlying disease effects in small animals, as well as expected increase in QOL in animals. However, we did not have sufficient data regarding IPET-S-only dosages, and we could not claim to have proper support to claim effectiveness. Accordingly, here, we present our study reflecting the collection of more data, dosage administration timing and other factors, investigating IPET-S palatability, anti-tumor effects, QOL improvement, and presence of metastasis.

- **Test Specimens:** PET-S (containing bulk powder) 1 Tab 150mg
- **Test Animals:** We utilized 11 dogs diagnosed histologically or clinically with tumor

masses.

● **Studied Items:** Palatability, QOL, anti-tumor effect, presence of metastasis during dosage period

● **Methodology:** IPET-S-only dosage with no aggressive treatment after diagnosis **(11 subjects)**

● **Determination of anti-tumor effect:** We used the RECIST (Response Evaluation Criteria in Solid Tumors) standard to evaluate the anti-tumor effects. Namely,

CR: Tumor completely disappears after four weeks or longer, based on visual or image inspection

PR: Tumor reduces 30% or more after four weeks or longer, based on visual or image inspection

PD: Tumor increases 20% or more, based on visual or image inspection

SD: Changes not categorized as PR or PD

Improvements according to impression preparation are evaluated as PR, PD or SD according to ratio of cells.

●**Palatability:** There were no issues with palatability for any of the subjects. The small size of the tablets (5mm diameter x 3mm height) allowed for mixing them in with food for easy acceptance.

During IPET-S dosage, one subject exhibited diarrhea, but a temporary reduction in dosage resulted in improvement. A return to the original dosage did not result in a recurrence of symptoms, leading us to conclude that there are no strong side effects.

●**Anti-Tumor Effect:** Clear Disappearance or Reduction:Three subjects (27.3%), No Change: One subject, Increase:Seven subjects.

Of the three subjects exhibiting a clear disappearance or reduction: CR:One subject PR:Two subjects.

●**QOL :** Improvement:Eight subjects (72.7%), Stable:One subject, Aggravation:Two subjects.

The response rate for the subject group administered an IPET-S-only dosage (CR + PR) was three of 11 subjects (27.3%). QOL improvement was eight of 11 subjects (72.7%).

In this study the response rate of the anti-tumor effect of IPET-S-only dosage was a CR of one subject and a PR of two subjects (27.3%). Of the two PR subjects, one was evaluated via impression preparation. Removing this case results in a response rate of two out of 11 subjects (18.2%). The tumor indicating CR was dog transitional cell carcinoma of the urinary bladder. The PR was a dog digestive tract plasma cell neoplasm evaluated by impression preparation as dog mammary gland cancer. The

behavior of the dog transitional cell carcinoma of the urinary bladder was extremely locally invasive, with a high metastasis rate. However, having confirmed with hospitals that used the supplement, two years later, there have been no confirmed local recurrence or metastasis. Of the two subjects indicating PR, the two cases of mammary gland cancer showed gradual reduction over the two months after the start of dosage. However, there was a gradual increase subsequent, including a metastasis to the lungs, resulting in the death of the subject 160 days after the start of dosage. The other subject experienced a cessation of mucous and bloody stool, and continues to be doing well.

Comparing our response rate with the response rate of piroxicam (a commonly used cycoxygenase inhibitor for dog squamous cell carcinoma of the oral cavity) in a veterinary clinic setting, it is unclear whether it is the same level or whether it is greater. In other words, where Schmidt et.al. used piroxicam (an anti-infammatory analgesic) only for dog squamous cell carcinoma of the oral cavity, three of 17 subjects (17.6%; CR:1, PR:2) were reported to have responded. From this result, we can say that IPET-S is a dietary supplement exhibiting anti-tumor effects for cancer-bearing animals similar to piroxicam, which is used as an effective anti-tumor pharmaceutical in dog squamous cell carcinoma of the oral cavity and dog transitional cell carcinoma of the urinary bladder, etc.

In this study, we administered an IPET-S-only dosage to dogs and cats with tumors. As a result, we can conclude that there are no significant side-effects with IPET-S. We can also conclude that there is an expected improvement in QOL, and further that IPET-S is a dietary supplement that provides an expected anti-tumor effect in cancer-bearing dogs.