

## [Concerning the antipyretic, analgesic, and antiinflammatory actions of TAHEEBO tea]

## タヒボ茶の解熱、鎮痛および抗炎症作用について

Mizue Tanaka<sup>1)</sup>, Masaomi Kawai<sup>1)</sup>, Fuminori Suzuki<sup>1)</sup>, Eiji Michioka<sup>2)</sup>, Yukio Naito<sup>2)</sup>, and Hajime Yamamoto<sup>3)</sup><sup>1)</sup> Department of Clinical Nutrition, Faculty of Health Science, Suzuka University of Medical Sciences<sup>2)</sup> Suzuka National College of Technology<sup>3)</sup> Faculty of Pharmaceutical Science, Nagoya Municipal University

## [目的]

タヒボ茶の原木(*Tabebuia avellanedae* Lorentz ex Griseb)は、南米のアマゾン流域の熱帯原生雨林に自生するノウゼンカズラ科の樹木の一種で、その内部樹皮に有効成分が含まれ、抗炎症・鎮痛、利尿・血圧降下作用及び抗腫瘍作用等が報告されている。今回、タヒボの木質部の鞣皮部を粉末にし、100℃の水浴上で1h攪拌水抽出後ヒダ濾紙で濾過し、凍結乾燥物とし、ラットでの体温に及ぼす影響、解熱作用、鎮痛作用及び抗炎症作用について検討した。

## [方法]

解熱作用はWistar系雄性ラット180g～230g(6週令)を用い、一夜絶食後7.5% Brewer's

Yeast生理食塩水1ml/100g BWを背部皮下に投与し、3h後に被験物質を経口投与し、以降1h毎に5hまで直腸体温をサーミスター(Digital Laboratory Thermometer BAT-12, USA)で測定した。鎮痛作用は、ddy雄性マウス(5週令)を用い、被験物質を経口投与1h後に0.7%酢酸生理食塩水を10ml/kgBW腹腔内注射し、10分後の10分間のWrithing数を測定し、その抑制効果を検討した。抗炎症作用は中西ら(1974年)の方法に従った。体重200g前後のWistar系雄性ラットを用い、一夜絶食後、被験物質を経口投与後0.05% Carrageenin生理食塩水3ml/rat腹腔内注射し、4h後の腹水中に遊走してくる白血球数を調べた。

## [結果]

タヒボ水抽出物は600mg/kg POでラットの正常体温を降下させた。Yeast発熱ラットに対し、有意に解熱効果が認められた。鎮痛作用は300又は600mg/kg POで有意(P<0.05)なWrithing数の抑制効果が認められた。また、ラットのCarrageeninによる腹膜炎に対し白血球の遊走阻止作用を示す傾向が認められた。

## ■ English translation

## [Objectives]

The raw wood (*Tabebuia avellanedae* Lorentz ex Griseb) of TAHEEBO tea is a tree classified as Bignoniaceae that grows naturally in the tropical native rainforest in the Amazon basin of South America. Its inner bark contains active ingredients, which are reported to have antiinflammatory and analgesic effects, diuretic and blood pressure-lowering effects, antitumor effects, etc. In the present

study, the bast of the xylem of the TAHEEBO tree was powdered, boiled and stirred in a water bath at 100°C for 1 hour, and filtered through a folded paper filter. The filtrate was lyophilized, and its effect on body temperature and its antipyretic, analgesic and antiinflammatory actions were investigated in rats.

## [Methods]

The antipyretic action was measured in Wistar male rats at 6 weeks of age (180 to 230 g). After fasting overnight, 1 mL/100 g BW of a 7.5% suspension of Brewer's Yeast in physiological saline was administered subcutaneously in the back. Three hours later, the test substance was orally administered, and for the following 5 hours the rectal temperature was measured every hour using a thermistor (Digital Laboratory Thermometer BAT-12, USA). The analgesic action was investigated in ddy male mice at 5 weeks of age. One hour after oral administration of the test substance, 10 mL/kg BW of a 0.7% acetic acid in physiological saline was intraperitoneally administered. After 10 minutes, the number of writhes exhibited was counted for 10 minutes, and the inhibitory effect was assessed. The antiinflammatory action was investigated according to the method established by Nakanishi et al. (1974). To Wistar male rats weighing around 200 g, the test substance was orally administered after overnight fasting, followed by intraperitoneal injection of a 0.05% suspension of carrageenin in physiological saline (8 mL/rat). After 4 hours, the white blood cells migrated into ascites fluid were counted.

## [Results]

The water-extract of TAHEEBO caused a decrease in normal body temperature after oral administration at a dose of 600 mg/kg. A significant antipyretic effect was observed in rats with yeast-induced fever. Regarding the analgesic action, a significant (P < 0.05) inhibition was observed in the number of writhes in mice orally administered at 300 or 600 mg/kg. In carrageenin-induced peritonitis in rats, a trend for inhibition of white blood cell migration was observed.

## 第38回 米国生薬学会

[Cancer Chemopreventive of *Tabebuia Avellanedae* Extracts and its constituents.]

## タベブイア・アベラネダエ抽出物とその成分に関する癌予防効果について

Shinichi Ueda, Harukuni Tokuda and Faculty of Pharmaceutical Science, Kyoto University, 606-01, Department of Biochemistry, Kyoto Prefectural University of Medicine Kyoto 602, JAPAN

京都大学・上田伸一、京都府立医科大学・徳田春邦

In continuation of our studies on the extracts and its constituents of *Tabebuia avellanedae*, we have isolated and identified some naphthoquinones (5-hydroxy-2-(1-hydroxyethyl)-naphtho[2,3-b]furan-4,9-dione and others). They have been examined in the inhibitory effect in Raji cells of tumor promotion by 12-O-tetradececanoylphorbol-13-acetate (TPA) combined with n-butiric acid (Short term in vitro assay for anti-tumor promoter), and on mouse skin carcinogenesis initiated by 7,12,-dimethylbe(a)anthracene. Extracts also examined for hepatocarcinogenesis. These results suggested aq. extracts possess chemoprevention effect on some organs.

## ■ 日本語訳

タベブイア・アベラネダエの抽出物、ならびにその成分に関する研究の過程で、われわれは化合物ナフトキンの一種である2-(1-ヒドロキシエチル)-5-ヒドロキシナフト[2,3-b]フラン-4,9-ジオン、ならびにその関連化合物を単離し、同定した。それぞれの化合物を試験管内試験法の抗発がんプロモーター短期検出法、ならびに動物を用いたDMBA-TPAの作用によるマウス皮膚二段階発がん試験を行なったところ、それぞれに抑制効果を認めた。また抽出物については肝臓での発がん抑制効果についても試験を行なった。これらの結果はタベブイア・アベラネダエの熱水抽出物が、数種の臓器においてがん予防効果を持つことが示唆された。