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「Anti-tumor effect of TAHEEBO tea extract」

タヒボ茶抽出物の抗腫瘍効果

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【目的】

京大の上田らはブラジル産ノウゼンカズラ科植物を原料にしたタヒボ茶の抽出物中に抗発癌プロモーター作用のあることを見出し、その抽出物の主成分がナフトキノンであることを認めた。そこでタヒボ茶抽出物の抗腫瘍効果について解析した。

【方法】

BALB/cマウスにMeth-a腫瘍細胞を右側腹皮内に106個、左側腹皮内に2×105個接種し、3日目から3日間タヒボ茶抽出物を右側腫瘍内に投与し、投与していない左側腫瘍の増殖を21日間観察した。又自然転移のモデルであるColon26皮下接種による肺転移の系でも調べた。

【結果並びに考察】

水900mlにタヒボ茶15gを加えて5分間沸騰させた熱水抽出物(この中に75μg/mlのナフトキノンが含まれる)を0.1mlずつ右側腫瘍内に投与したところ7匹中3匹で腫瘍が治癒し、投与していない左側腫瘍も7匹中1匹で腫瘍が消失した。タヒボ茶抽出物0.1mlを皮内投与した1日後に血中のIAPを測定したところ有意に誘導された。すなわちタヒボ茶を投与することによりマクロファージと好中球が活性化された。

マウスにColon26を皮下接種し、接種後10日目から原発腫瘍内に3日間タヒボ茶を0.1mlずつ投与したところ、延命効果が認められた。更にこの系に腫瘍接種後タヒボ茶を2週間0.1mlずつ経口投与し、肺への転移コロニーの数を調べたところ、腫瘍内投与だけに比して、経口投与することにより有意に転移を抑えた。

■ English translation

【Objective】

Ueda et al. of Kyoto University found anti-tumor-promoter activity in an extract of TAHEEBO tea, whose raw material comes from the NOUZENKAZURA tree grown in Brazil, and also demonstrated that the major ingredients of the extract are naphthoquinones. Therefore, we analyzed the anti-tumor effect of the TAHEEBO tea extract.

【Methods】

BALB/c mice received intradermal inoculations of

Meth-a tumor cells in both the right (106cells) and left flanks (2×105cells). For 3 days from the 3rd day after inoculation, intratumoral administration of the TAHEEBO tea extract was given to the right tumor, and the growth of the non-treated left tumor was observed for 21 days. In addition, the anti-tumor effect of the extract was investigated in liver metastasis induced by subcutaneous inoculation of Colon 26 cells, as a spontaneous metastasis model.

【Results and Discussion】

Hot-water extract (containing 75μg/mL naphthoquinones) of TAHEEBO, obtained by boiling 15 g of TAHEEBO tea in 900 mL of water for 5 minutes, was administered at a dose volume of 0.1 mL to the right tumor. The tumor was cured in 3 out of 7 animals, and also the left tumor, which received no intratumoral administration, disappeared in 1 out of 7 animals. One day after intradermal administration of 0.1 mL of TAHEEBO tea extract, significant induction of IAP in blood was observed. This means that the administration of TAHEEBO tea activates macrophages and neutrophils.

When Colon 26 cells were inoculated subcutaneously in mice, followed by intratumoral administration of 0.1 mL of the TAHEEBO tea extract for three consecutive days from the 10th day after inoculation, life-prolonging effects were observed. In addition, in this system, the number of metastatic colonies in the lungs was examined by giving some animals additional oral administrations of 0.1 mL of the TAHEEBO tea extract for 2 weeks after the tumor inoculation. As a result, significant inhibition of metastasis was observed in animals that received the additional oral administration, as compared with those treated only by intratumoral administration.