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Chemical analysis of Radix Astragali

Summary

This study was carried out to analyse chemical and medical composition, and biological activity of the age of Huangqi(*Astragalus membranaceus* B.)

1. Among of chemical composition of Radix Astragali(root of Astragalus, Huangqi), contents of crude proteins were reduced in 2 to 3-year-old Astragalus than those of 1-year-old, but were increased in the 4-year-old plant. Crude fiber and calcium contents were lower in the 4-year-old plant.
2. The total concentrations of astragalosides of 3-year-old Astragalus were higher than those of the others.
3. The total concentrations of astragalosides were no obvious difference between different above the sea levels.
4. The activities of DPPH according to the age were higher in 3 and 5-year-old Astragalus. In extract solvent type, distilled water extract was higher than that of methanol and ethanol.
5. Inhibition effect of Angiotensin converting Enzyme(ACE) activity showed more than 30% in all treatment compared to the control in 10mg/ml concentration. but there were no difference between plant ages and extract solvent types.
6. Glutathione-S-transferase(GST) activity of older plants was increased compared to the control, but there was noting to do with extract solvent types.
7. Growth inhibition of stomach adenocarcinoma, AGS showed more than 30% in all treatment compared to the control in 1mg/ml concentration, but there were no difference in the age of the plant and extract solvent type.
8. Growth inhibition of breast adenocarcinoma, MCF7 showed higher in 3 and 5-year-old Astragalus than others.
9. The activity of human T and B cell was the highest in 3-year-old Astragalus extracted by water.

적 요

다년근 황기의 일반성분 및 약리성분 분석과 항산화, 혈압저하, 해독작용, 혈당강하, 항암 및 면역활성 등의 생리활성을 검정한 결과를 요약하면 다음과 같다

1. 황기의 일반성분 중 단백질은 1년근 보다 2, 3년근에서 감소 후 4년근에서 증가하였고, 조섬유, 칼슘함량은 4년근에서 감소하는 경향이였다.
2. 년생별 Total Astragaloside함량은 3년근에서 증가하는 경향이였다.
3. 재배지표고별 Total Astragaloside함량은 큰 차이가 없었다.
4. DPPH 활성 검정결과 년생별로는 3, 5년생에서, 추출용매는 물추출물, 메탄올추출물, 에탄올추출물순이였다.
5. ACE 억제활성 검정결과, 10mg/ml농도의 경우 전처리구에서 30%이상의 억제활성이 있었으나 년생과 크기별 차이는 일정한 경향을 찾을 수 없었다.
6. GST 활성 검정결과, 농도에 관계없이 년생이 지날수록 활성이 증가하는 경향이였다.
7. 인간 위암세포의 억제활성 검정 결과 1mg/ml농도에서 년생과 추출용매에 관계없이 30% 이상의 억제율이 나타났으나 크기와 년생별 일정한 경향은 없었다.
8. 인간 유방암세포의 억제활성 검정결과 3년생, 5년생의 활성이 높았다.
9. 인간 면역세포인 B cell과 Tcell의 활성을 검정한 결과, 3년생 물추출물에서 가장 높은 활성을 보였다.