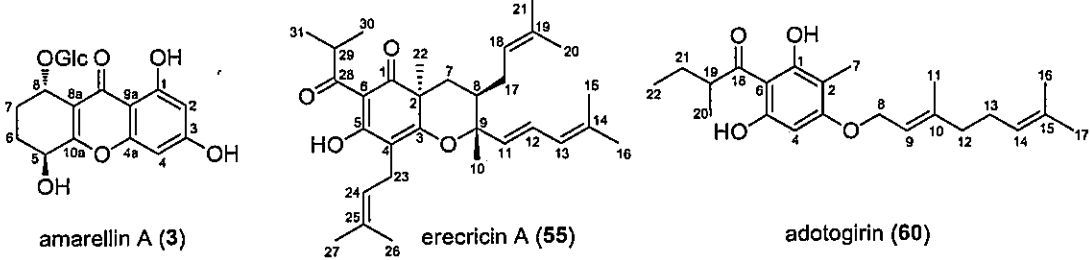


報 告 番 号	甲 創 第 12 号	氏 名	呂 爽 欣
学 位 論 文 題 目	Chemical studies on Mongolian and Japanese medicinal plants — Constituents of <i>Gentianella amarella</i> ssp. <i>acuta</i> , <i>Lomatogonium carinthiacum</i> , <i>Ligularia sibirica</i> , <i>Caragana jubata</i> , and <i>Hypericum erectum</i> — (モンゴル産及び日本産薬用植物の化学的研究)		
<p>Medicinal plants have been playing a significant role in the drug development, providing a variety of bioactive secondary metabolites as new drug seeds. Our laboratory has been investigating the constituents of medicinal plants used in diverse areas such as Mongolia, Japan, China, and Bangladesh, designated to identify natural products-based lead compounds for new therapeutic agents. In the course of this research project, phytochemical investigations on four Mongolian medicinal plants, <i>Gentianella amarella</i> ssp. <i>acuta</i>, <i>Lomatogonium carinthiacum</i>, <i>Caragana jubata</i>, and <i>Ligularia sibirica</i>, together with one Japanese medicinal plant, <i>Hypericum erectum</i>, were carried out.</p> <p><i>G. amarella</i> ssp. <i>acuta</i>, an annual herb, has been used for the treatment of hepatitis, fever, headache, and gallbladder disorders in Mongolia. Repeated column chromatographic separations of the extract from the aerial parts of <i>G. amarella</i> ssp. <i>acuta</i> gave two tetrahydroxanthones, 1,3,5<i>S</i>,8<i>S</i>-tetrahydroxy-5,6,7,8-tetrahydroxanthone (1) and 1,3,5<i>R</i>,8<i>S</i>-tetrahydroxy-5,6,7,8-tetrahydroxanthone (2), and six new tetrahydroxanthone glycosides, amarellins A–F (3–8). The structures of 1–8 were elucidated on the basis of spectroscopic analysis, chemical conversion, and ECD calculation.</p> <p>Chemical study on the aerial parts of <i>L. carinthiacum</i>, an herbal medicine for hepatic disorders, led to the isolation of phenols, iridoids, flavonoids, and a xanthone. Sesquiterpenoids were isolated from the roots and rhizomes of <i>L. sibirica</i>, an herbal medicine to treat bronchitis, cough, asthma, and phthisis, while triterpenoids and flavonoids were isolated from the stems of <i>C. jubata</i>, a remedy for gynecological problems, plethora, and hypertension.</p> <p>Investigation on the constituents of the roots of <i>H. erectum</i>, used as an antihemorrhagic and antibiotic herb, resulted in the isolation of six new prenylated achylphloroglucinols, erecrins A–E (55–59) and adotogirin (60). Adotogirin (60) exhibited an antimicrobial activity against <i>Staphylococcus aureus</i> and <i>Bacillus subtilis</i>.</p> <div style="text-align: center;">  <p>amarellin A (3) erecrin A (55) adotogirin (60)</p> </div> <p>Structures of amarellin A (3), erecrin A (55), and adotogirin (60)</p>			