

|                  |   |
|------------------|---|
| Title            | Constituents of the seed of malva verticillata. VI. characterization and immunological activities of a novel acidic polysaccharide  |
| Sub Title        |   |
| Author           | 権田, 良子(Gonda, Ryoko)<br>友田, 正司(Tomoda, Masashi)<br>金成, 美枝子(Kanari, Mieko)<br>清水, 訓子(Shimizu, Noriko)<br>山田, 陽城(Yamada, Haruki)  |
| Publisher        | 共立薬科大学  |
| Publication year | 1990  |
| Jtitle           | 共立薬科大学研究年報 (The annual report of the Kyoritsu College of Pharmacy). No.35 (1990. ) ,p.41- 41  |
| JaLC DOI         |   |
| Abstract         |   |
| Notes            | 抄録  |
| Genre            | Technical Report  |
| URL              | <a href="https://koara.lib.keio.ac.jp/xoonips/modules/xoonips/detail.php?koara_id=AN00062898-00000035-0041">https://koara.lib.keio.ac.jp/xoonips/modules/xoonips/detail.php?koara_id=AN00062898-00000035-0041</a> |

慶應義塾大学学術情報リポジトリ(KOARA)に掲載されているコンテンツの著作権は、それぞれの著作者、学会または出版社/発行者に帰属し、その権利は著作権法によって保護されています。引用にあたっては、著作権法を遵守してご利用ください。

The copyrights of content available on the KeiO Associated Repository of Academic resources (KOARA) belong to the respective authors, academic societies, or publishers/issuers, and these rights are protected by the Japanese Copyright Act. When quoting the content, please follow the Japanese copyright act.

**Constituents of the Seed of *Malva verticillata*. VI.  
Characterization and Immunological Activities  
of a Novel Acidic Polysaccharide\***

Ryōko GONDA, Masashi TOMODA, Mieko KANARI, Noriko SHIMIZU  
and Haruki YAMADA

権田良子, 友田正司, 金成美枝子, 清水訓子, 山田陽城\*\*

A novel acidic polysaccharide, designated as MVS-VI, was isolated from the seeds of *Malva verticillata* by hot water extraction followed by ion-exchange chromatography on DEAE-Sephadex A-25, and successive gel chromatography with Sephacryl S-500, Toyopearl HW-60F and Sephadex G-25. It gave a single band on PAGE, and gave a single peak on gel chromatography, which gave a value of  $2.6 \times 10^4$  for the molecular mass.

MVS-VI is composed of L-arabinose: D-xylose: D-galactose: D-glucose: L-rhamnose: D-galacturonic acid in the molar ratio of 30:15:20:3:2:10, in addition to small amounts of peptide moiety.

Chemical and spectroscopic studies indicated that the minimal unit of polysaccharide is composed of ten terminal  $\alpha$ -L-arabinofuranose, sixteen  $\alpha$ -1,5-linked L-arabinofuranose, three  $\alpha$ -2,5-branched L-arabinofuranose, one  $\alpha$ -1,3-linked L-arabinopyranose, six  $\beta$ -1,3-linked D-xylopyranose, nine  $\beta$ -1,4-linked D-xylopyranose, one terminal  $\beta$ -D-galactopyranose, eight  $\beta$ -1,3-linked D-galactopyranose, one  $\beta$ -1,4-linked D-galactopyranose, three  $\beta$ -1,6-linked D-galactopyranose, seven  $\beta$ -3,6-branched D-galactopyranose, three  $\alpha$ -1,4-linked D-glucopyranose, one  $\alpha$ -1,2-linked L-rhamnopyranose, one  $\alpha$ -2,4-branched L-rhamnopyranose and ten  $\alpha$ -1,4-linked D-galactopyranosyluronic acid residues.

MVS-VI showed significant reticuloendothelial system-potentiating activity in a carbon clearance test. In addition, MVS-VI possesses remarkable anti-complementary activity, which is superior than that of the positive control, NART-2,4 from the root of *Angelica acutiloba*.

\* 本報告は *Chem. Pharm. Bull.*, **38**, 2771—2774 (1990) に発表.

\*\* 北里研究所東医総研