

**Antimicrobial Substances from Rhizomes of the Giant Knotweed  
*Polygonum sachalinense* against the Fish Pathogen  
*Photobacterium damsela* subsp. *piscicida***

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The antimicrobial compounds against the fish pathogen *Photobacterium damsela* subsp. *piscicida* were isolated from *Polygonum sachalinense* rhizomes. The structures of the antimicrobial compounds **1** and **2** were determined by <sup>1</sup>H and <sup>13</sup>C NMR, 2D-NMR (COSY, HSQC, HMBC and ROESY) and FAB-MS to be phenylpropanoid glycosides, vanicoside A and B, respectively. Both compounds have feruloyl and *p*-coumaroyl groups bonded to a sucrose moiety in their structures. Vanicoside A also has an acetyl group in the sucrose moiety. The MIC values for vanicoside A and B against *Ph. damsela* subsp. *piscicida* DPP-1 were 32 and 64 µg/ml, respectively. The antimicrobial activities of these vanicosides were modest, in contrast to higher activities (MICs at <4 µg/ml) of antibiotics, florphenicol, ampicillin and amoxicillin, which have been generally used for treating pasteurellosis. The activities of the vanicosides, however, were higher than those (MICs at 256 µg/ml) of ferulic acid and *p*-coumaric acid. It was suggested that the structure of phenylpropanoids esterified with sucrose was essential for higher antimicrobial activity of vanicosides and also acetylation of sucrose might affect the activity against the bacterium.

**Key words:** *Polygonum sachalinense*, Antimicrobial Vanicoside A and B, Phenylpropanoid Glycoside