

A-2**Structure-antibiotic activity of cecropin A(1-8)-magainin 2(1-12), cecropin A(1-8)-melittin(1-12) hybrid peptides and their analogues studied by NMR spectroscopy**

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Cecropin A(1-8)-magainin 2(1-12) and cecropin A(1-8)-melittin(1-12) hybrid peptides were known to have potent antitumor and antibacterial activity. In particular, cecropin A(1-8)-magainin 2(1-12) has powerful antibacterial and antitumor activity with no hemolytic effect. These two hybrid peptides contain the Gly-Ile-Gly hinge sequence in the central region. Deletion of the Gly-Ile-Gly hinge sequence in cecropin A(1-8)-magainin 2(1-12) and cecropin A(1-8)-melittin(1-12) produced a considerable reduction in both antitumor and antibacterial activity. However, the insertion of Pro in Gly-Ile-Gly hinge sequence of these peptides retained good antitumor and antibacterial activity. In order to elucidate the three dimensional structure-antibiotic activity of hybrid peptides with the hinge region, without the hinge region, and proline in the hinge region, we determined structures of these hybrid peptides in DPC micelles using NMR spectroscopy.