The activity of microcin E492 from Klebsiella pneumoniae is regulated by a microcin antagonist

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Microcin E492 is a polypeptide antibiotic that is produced and excreted by Klebsiella pneumoniae. Different growth conditions of the producer strain affect microcin activity. The production of a microcin antagonist is responsible for the changes in microcin activity. The microcin antagonist is induced when cells are iron-deprived, resulting in a low microcin activity. The microcin antagonist was purified using a procedure developed for the isolation of a catechol-type siderophore, and its activity was titrated using purified microcin. The inhibitory effect of the microcin antagonist is not observed when this compound is forming a complex with iron. The same inhibitory effect on microcin activity was obtained using purified enterochelin from Escherichia coli. The microcin antagonist was identified as enterochelin through thin-layer chromatography.