

Structure Elucidation of a Purple Peptide Found During the Purification of a Recombinant Protein from *Escherichia coli*

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E. coli, Purple Peptide, 3-Carboxy-3,4-dihydro-2*H*-naphtho[2,3-*b*][1,4]thiazine-5,10-dione

A purple substance (**4**) partially co-purified with a recombinant human B-type natriuretic peptide (hBNP), following an *E. coli* fermentation. The structure of the compound was elucidated by NMR, electrospray and FAB mass spectrometry. The chromophore is a 1,4-naphthoquinone condensed with the N-terminal cysteine of a heptapeptide by its NH₂- and SH-groups to form a dihydro-thiazine ring. The peptide sequence was determined as Cys-Lys-Val-Leu-Arg-Arg-His by mass spectrometric techniques. CID and data base matching identified it as the C-terminus of the 32-amino-acid recombinant peptide hBNP. This modification of an N-terminal Cys may be a more general phenomenon with implications for the production of heterologous proteins by microorganisms.

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