

## **MECHANISTIC ASPECTS OF THE FRAGMENTATION OF PROLINE-PHENYLALANINE RICH PEPTIDES**

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Prophenin-2 (PF-2) an 80 residue peptide rich in proline and phenylalanine has been found to have antibacterial properties. The amino acid sequence of PF-2 contains four almost perfect decaomer repeats, FPPPNV(F)PGPR, and tryptic digestion of PF-2 gives peptide fragments containing this repeat.

Electrospray collision induced dissociation (CID) spectra were recorded of singly and doubly protonated forms of the tryptic peptides. Abundant fragment ions were observed as a result of Pro-Pro cleavages. We propose a mechanistic explanation for these facile cleavages involving a cyclic peptide structure for B ions and a linear peptide structure for Y'' ions. Abundant BY' were also observed in the CID spectra where the new N-terminus is proline, we also propose a mechanism to account for these ions.