

Intramolecular cross-linking in the native JHBP molecule.

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Streszczenie

Juvenile hormone binding protein (JHBP) acts as a shuttle, carrying one of the most crucial hormones for insect development to target tissues. We have found that although the JHBP molecule does not contain tryptophan residues, it exhibits a weak fluorescence maximum near 420nm upon excitation at 315nm. Gel filtration experiments performed in denaturing conditions and ESI-MS analyses excluded the possibility that some low molecular ligand was bound to the protein molecules. Further UV and CD spectroscopy studies, as well as immunoblotting, showed that the unusual JHBP optical properties were due to dityrosine intramolecular cross-linking. These bridges were detected both in native and recombinant protein molecules. We believe that in *Galleria mellonella* hemolymph the DT generation occurs via ROS-mediated oxidation leading to the formation of cross-linked JHBP monomers. MS analyses of peptides generated after JHBP proteolysis indicated, that the dityrosine bridge occurs between the Y128 and Y130 residues.

Słowa kluczowe

dityrosine, *Galleria mellonella*, JHBP, Protein oxidation

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