Ubiquitin fragments: their known biological activities and putative roles.

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Streszczenie

Ubiquitin (Ub) is involved in many key processes of cell biology. Identification of compounds that could interfere in the ubiquitination process is of importance. It could be expected that peptides derived from the Ub-binding regions might be able to interact with Ub receptors themselves and modify an ability of the Ub receptors interactions. This review summarizes current knowledge about known Ub-derived peptides and discusses putative activity of unexplored Ub fragments. Among identified biologically active Ub-derived peptides, its decapeptide fragment of the LEDGRTLSDY sequence was found to exhibit strong immunosuppressive effects on the cellular and humoral immune responses, comparable to that of cyclosporine. Some of the Ub fragments possess strong antibacterial and antifungal potency. In the search for new peptides that could interfere in the interaction of Ub with other proteins, we investigated the pentapeptide Ub sequences present in non-ubiquitin proteins. Based on examination of the Swiss-Prot database, we postulated that sequences of some Ub fragments often exist in other protein molecules. However, some of those motives are represented more frequently than others and could be involved in regulation of cellular processes related to Ub.

Słowa kluczowe

criptides, peptic fragments, Ubiquitin, uboquitin-binding domain

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