PR11

Studies have demonstrated that PR39, a proline/arginine rich 39 amino acid antibacterial peptide originally derived from porcine bone marrow, exhibits a broad spectrum of biological activities, including the ability to induce angiogenesis and to limit inflammatory damage in a variety of animal models. The angiogenic effect is in part explained by the ability of PR39 to inhibit proteasome-dependent degradation of the transcription factor HIF-1a, while anti-inflammatory activity is associated with inhibition of IκBα degradation that in turn prevents activation of NFκB-dependent gene expression. The activities of PR39 reside in the N-terminal portion of the molecule encompassed by PR11. The most recent findings have demonstrated that PR39 is a non-competitive and reversible inhibitor of the proteasome function, which is achieved by a unique allosteric mechanism allowing for specific inhibition of degradation of selected proteins without affecting total proteasome-dependent proteolysis. A proline-arginine-rich 11 amino acid peptide derived from the naturally occurring peptide antibiotic PR39. PR39 has been shown to act as an inhibitor of both 20S and 26S proteasomes with proposed selectivity for the inhibition of the degradation of IκBα, HIF-1a and certain other proteins. PR39 has been reported to inhibit the proteasomal degradation of IκBα without effecting overall proteasome activity, or degradation of p21Cip1/Waf1 and c-fos, cell-cycle genes regulated by proteasome-dependent degradation. *In vitro* studies have demonstrated PR39 to be an efficient inhibitor of all three activities of the 20S proteasome. Unlike MG132 and lactacystin, long-term exposure to PR39 shows little toxicity or induction of HSP-70. In mouse models of myocardial infarction it has been shown that infusion with PR11 results in a significant reduction of myocardial infarct size. PR39, PR11 and related peptides may therefore provide novel means to regulate cellular function and the control of NF-κB-dependent gene expression for therapeutic purposes.

Citations: 9 View Online »

Manuals, SDS & CofA View Online »

Handling & Storage

Use/Stability	As indicated on product label or CoA when stored as recommended.
Long Term Storage	-20°C
Shipping	Blue Ice

Regulatory Status

RUO - Research Use Only

Product Details

Alternative Name	N-terminal undecapeptide of PR39
MW	1463.7
Purity	≥95% (HPLC)
Sequence	Arg-Arg-Arg-Pro-Arg-Pro-Pro-Tyr-Leu-Pro-Arg
Solubility	Soluble in water

Last modified: May 29, 2024

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