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(54) **Title:** COMPOUNDS FOR PROTEASOME ENZYME INHIBITION

(57) **Abstract:** Peptide-based compounds including heteroatom-containing, three-membered rings efficiently and selectively inhibit specific activities of N-terminal nucleophile (Ntn) hydrolases. The activities of those Ntn having multiple activities can be differentially inhibited by the compounds described. For example, the chymotrypsin-like activity of the 20S proteasome may be selectively inhibited with the inventive compounds. The peptide-based compounds include an epoxide or aziridine, and functionalization at the N-terminus. Among other therapeutic utilities, the peptide-based compounds are expected to display anti-inflammatory properties and inhibition of cell proliferation.

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