



THE UNIVERSITY of TEXAS

HEALTH SCIENCE CENTER AT HOUSTON

Office of Technology Management

**STRUCTURE OF PROLINE- AND ARGININE-RICH PEPTIDES THAT LEAD
TO INHIBITION OF INFLAMMATION AND INDUCTION OF
ANGIOGENESIS**

The Technology: PR39, a naturally produced proline-and-arginine-rich peptide consisting of 39 amino acids, induces angiogenesis and reduces inflammation in mouse models. Through structural and biochemical investigations of PR11, a truncated form of PR39, researchers at the University of Texas Health Science Center at Houston (UTHSC-H) have identified that the 20S proteasome-inhibiting activity of PR39 depends on specific amino acids and structural characteristics. They have also discovered a novel 12-amino acid peptide that has comparable activity as PR39.

The linear amino acid sequence does not allow the development or design of non-proteinaceous, small molecules, drugs based on the PR-peptides. With the identification of the structural properties required for the biological activity of PR11, pharmacophore information is now available for structure-based drug development and design. This peptide and its mutants are potential drugs for the treatment of heart diseases, inflammation, and stroke, as well as help establish a model system for cancer.

References: *J Mol Biol.* 2008 Dec 5; 384(1):219-27.

NON-CONFIDENTIAL TECHNOLOGY DESCRIPTION

The preceding is intended to be a non-confidential summary of a novel technology created at the University of Texas Health Science center at Houston (UTHSCH), for which the University has obtained patent protection.

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