

Gifts from the Gila monster

June 1 2011

Who would have thought that Gila monster saliva would be the inspiration for a blockbuster new drug for Type 2 diabetes? Or that medicines for chronic pain, heart attacks, high blood pressure and stroke would emerge from venom of the Magician's cone snail, the saw-scaled viper, the Brazilian lancehead snake and the Southeastern pygmy rattlesnake? These are just some of the sources contributing to the emergence of potential new drugs based on "peptides" that is the topic of the cover story in the current edition of Chemical & Engineering News (C&EN), ACS' weekly newsmagazine. Peptides are short sequences of amino acids that are the building blocks of proteins.

C&EN Senior Correspondent Ann Thayer explains that peptides play central roles in many key body processes involved in health and disease. As drugs, they have several advantages over traditional medications, including higher potency and lower toxicity. However, efforts to enlist peptides more extensively in medical treatment have stumbled due to peptides' short duration of action, tendency to be digested by enzymes in the stomach and other problems.

Thayer describes advances in overcoming those problems with 60 peptide drugs sold worldwide having sales of \$13 billion in 2010 and scores of others in the pipeline. Some of the most successful of those already in use are based on peptides found naturally in animals like the Gila monster. A companion article describes how manufacturers are stepping up production, collaborating with peptide discovery companies. Peptide drugs are now longer and more complex than those developed earlier, but improvements have made production faster and more cost-

effective.

More information: “Improving Peptides”:
pubs.acs.org/cen/coverstory/89/8922cover.html

Provided by American Chemical Society

Citation: Gifts from the Gila monster (2011, June 1) retrieved 25 April 2024 from
<https://phys.org/news/2011-06-gifts-gila-monster.html>

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