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A*Star creates biomaterial from squids, mussels

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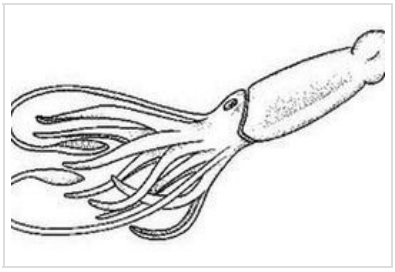
Scientists from Nanyang Technological University (NTU) and Singapore's Agency for Science, Technology and Research (A*STAR) use RNA sequencing and proteomics to develop a biomaterial from squid sucker ring teeth, sticky underwater glue from mussels and an extremely elastic material from sea snails' egg capsules



The biomaterials obtained from squid, mussel and snails can be made into biocompatible films for food and drug packaging and as cost-effective encapsulants to protect expensive drugs

Singapore: Scientists from Nanyang Technological University (NTU) and Singapore's Agency for Science, Technology and Research (A*STAR) have developed new biomaterials from squids, mussels and sea snails.

The breakthrough is made possible by the use of a new interdisciplinary approach which integrates RNA sequencing and proteomics with material science. The ground-breaking research allows scientists to speed up the discovery and development of new and better biomaterials within months instead of years.

The squid sucker ring teeth is one of the three biomaterials that NTU and A*Star scientists have studied. The other two discoveries include sticky underwater glue which is derived from mussels and an extremely elastic material from sea snails' egg capsules.

The squid-inspired biomaterial can be made into biocompatible films for food and drug packaging and as cost-effective encapsulants to protect expensive drugs against heat and impact during transportation and storage. Such new biomaterials can be used for a wide number of applications, even as parts for organ implants, as they are versatile and easily processed into different shapes and forms.

These new biomaterials are superior, if not comparable with those produced from petroleum-based polymers. However, they are made using eco-friendly processes without using harsh chemicals. This study further accelerates the understanding of nature's design and aims to find new materials for the future which are more sustainable than today's plastics.

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