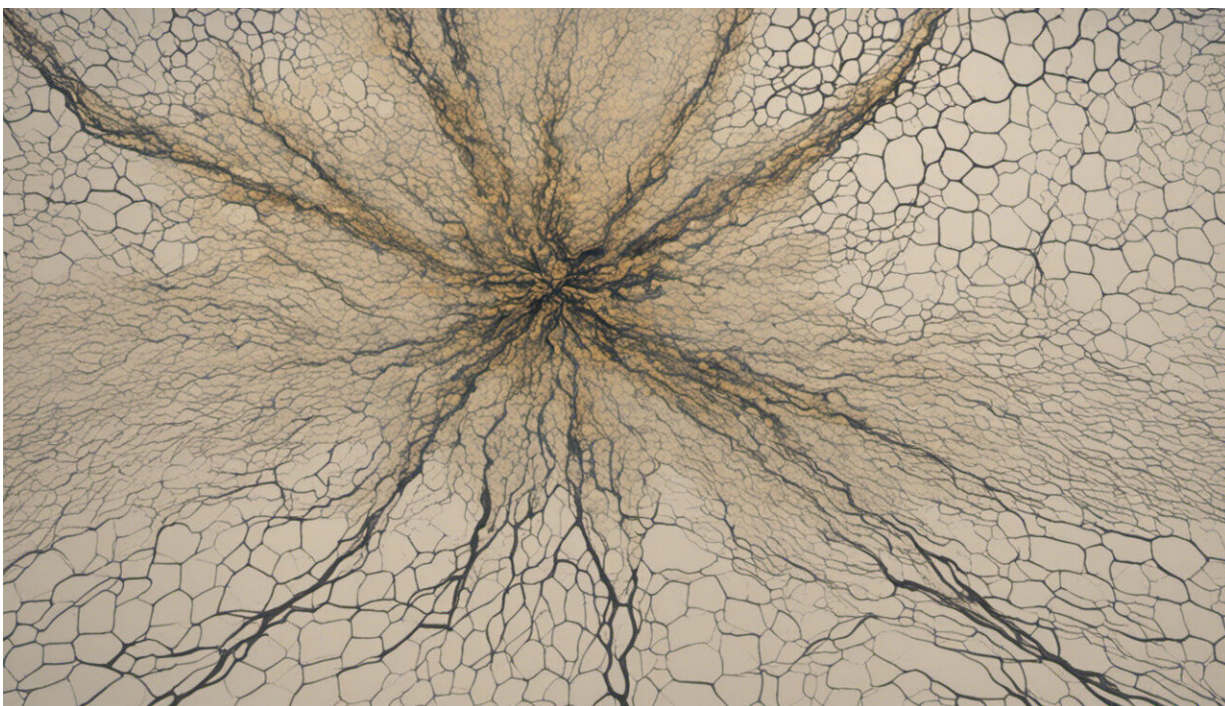


Enlisting a drug discovery technique in the battle against global warming

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Credit: AI-generated image ([disclaimer](#))

Scientists in Texas are reporting that a technique used in the search for new drugs could also be used in the quest to discover new, environmentally friendly materials for fighting global warming. Such materials could be used to capture the greenhouse gas carbon dioxide from industrial smokestacks and other fixed sources before it enters the

biosphere. The new study appears in ACS' journal *Energy & Fuels*.

Michael Drummond and colleagues Angela Wilson and Tom Cundari note that greener carbon-capture technologies are a crucial component in mitigating climate change. Existing technology is expensive and can generate hazardous waste. They point out that proteins, however, can catalyze reactions with [carbon dioxide](#), the main [greenhouse gas](#), in an environmentally friendly way. That fact got the scientists interested in evaluating the possibility of using proteins in carbon capture technology.

In the study, they used the pharmacophore concept to probe how the 3-dimensional structure of proteins affects their ability to bind and capture carbon dioxide. The German chemist and Nobel Laureate Paul Ehrlich, who originated the concept a century ago, defined a pharmacophore as the molecular framework that carries the key features responsible for a drug's activity.

The scientists concluded that the approach could point the way to the development of next-generation carbon capture technologies.

More information: "Toward Greener Carbon Capture Technologies: A Pharmacore-Based Approach to Predict CO₂ Binding Sites in Proteins", *Energy & Fuels*.

Provided by American Chemical Society

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