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The synthetic sibling of an expensive molecule harvested from a tiny seaweed-dwelling animal could lead to next-generation cancer drugs or a functional cure for HIV, an East Bay company believes.

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Seaweed in Ensendada Baja, Calif.

Those lofty targets are years in the distance for startup BryoLogyx Inc., but the company said it will expand preclinical testing next year with synthetic bryostatin, eyeing more investor and scientific interest.

BryoLogyx bought exclusive rights to synthetic bryostatin and its potential offshoots from Stanford University, the company said Monday. Financial terms of the deal were not disclosed, but company co-founder, President and CEO Thomas Loarie said the license cost less than $100,000.

Despite the promise of natural bryostatin, studies have been limited by the eye-popping cost of the molecule: as much as $1.3 million, he said, for a single gram.

Synthetic bryostatin, built by Paul Wender's lab at Stanford, offers a lower-cost alternative to natural bryostatin produced by a tiny marine animal known as *Bugula neritina*.

BryoLogyx — based in Loarie's Danville home and using space at the Bishop Ranch Intelligence Innovation Accelerator in San Ramon — is not the first to believe it can capitalize on synthetic bryostatin.

Neurotrope Inc., a New York company (NASDAQ: NTRP), already has a license with Stanford to use synthetic bryostatin for central nervous system disorders, lysosomal storage diseases, stroke, cardio protection and traumatic brain injury. Its most-advanced program is in Alzheimer's disease.

BryoLogx owes at least part of its start to Neurotrope. When venture investor John Abeles left Neurotrope's board, he believed there were "more opportunities" for the compound, Loarie said. Abeles reached out to

Loarie — a longtime friend who knows Wender — and BryoLogyx lined up its license for synthetic bryostatin in cancer and HIV.

"John was the catalyst for putting the company together," Loarie said. "With John's network, Paul's network and my network, we recruited our core team and medical advisors, our lawyer and a group of almost 20 contractors..

Wender and colleagues at UCLA last year showed that synthetic bryostatin coaxed HIV out of reservoirs that the AIDS virus uses to escape antiretroviral drugs. By drawing out the virus, other drugs could knock out the virus — a strategy known as "shock and kill" or "kick and kill."

Foster City-based Gilead Sciences Inc. (NASDAQ: GILD) and others are working on various shock-and-kill strategies.

Meanwhile, the National Cancer Institute a year ago presented data showing that bryostatin could sensitize chronic lymphocytic leukemia cells, priming them for attack by immunotherapy drugs.

"It increases the density of the antigen on the tumor and makes the tumor so 'hot' that it can be recognized by the immunotherapy," Loarie said.

The potential of bryostatin has attracted top HIV researchers to BryoLogyx's scientific advisory board, including Dr. Steven Deeks of the University of California, San Francisco, and Dr. Paul Volberding, director of the amFAR Institute for HIV Cure Research in San Francisco.

Yet despite bryostatin's promise in HIV, cancer offers a quicker path for BryoLogyx to bring a drug to market or to line up a partnership that would translate to cash.

"In HIV, it's a certain timeline to market, which is longer than the timeline to market for immuno-oncology," Loarie said. "Cancer offers a number of partnership opportunities. There are a lot of shots on goal and it's red-hot from a financing standpoint."

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