IN brief

Novel Indian clotbuster

A new thrombolytic treatment discovered in India is poised to enter clinical trials following local authorities' go-ahead on 17 August 2012. The home-grown clot-dissolving therapeutic could become the first innovative compound from an Indian public institute jointly developed with a US company. The drug, clot-specific streptokinase (CSSK), was developed by Girish Sahni and colleagues at the Institute of Microbial Technology in Chandigarh. In 2006, Nostrum Pharmaceuticals of Edison, New Jersey, bought the licensing rights to CSSK for \$5 million plus royalties and now will progress the drug through phase 2 and 3 trials. Bacterial streptokinase, the original clot-busting agent, has been in use since the 1970s. In the early 1990s, South San Francisco, California-based Genentech introduced recombinant human tissue plasminogen activator (tPA), which proved only slightly superior to streptokinase. One advantage of Genentech's tPA, however, was its specificity, as tPA is activated only in the presence of fibrin in blood clots. Streptokinase, in contrast, is a nonspecific plasminogen activator. Its presence can generate plasmin throughout circulation, promoting the proteolytic degradation of blood factors and increasing the risk of hemorrhagic complications. The Indian group solved this specificity problem by modifying streptokinase, fusing its core elements with fibrin-binding domains 4 and 5 of human fibronectin. The resulting CSSK is a pro-drug that remains inactive in circulation until it meets a fibrin clot. The clot plasmin then snips off the fibrin-binding domains to activate plasminogen in a clot-specific way. Sahni says that studies in *ex vivo* human blood circulation and *in vivo* primate models (unpublished results) "clearly indicate a blood-clotting factors protection profile and specificity of action comparable, perhaps even superior, to tPA." If CSSK is approved, it could be India's answer to more expensive thrombolytic agents such as tPA. "At about \$800–\$1,000 per dose, against \$30–\$50 for streptokinase, tPA is unaffordable for the general masses in the third world," Sahni says. This translational strategy, whereby Indian intellectual property is commercialized by US companies, could be "a great role model" for future products. "Certainly a close industry-scientist-investor liaison will be highly desirable. This is perhaps one of the very few examples in India where original research has led to a potential globally important biotherapeutic," says Govindarajan Padmanabhan, a leading biochemist at the Indian Institute of Science in Bangalore. "In India, industry needs hand-holding with government support to eventually make a product, at least in this area [of biologics]."

Killugudi Jayaraman

To read more on this topic, click on [Trade Secrets blog](#).

capitalists might consider too risky to touch. "When we seed something, we really try to address the awkward questions that the academic doesn't want to address," says Stephen Thompson, Brandon's managing director. "We take bits of IP, find its natural home in the world order, and quickly and cheaply reduce the outstanding risk." Sometimes that means developing a technology for something entirely different from what the academic originally envisioned. For example, Brandon portfolio holding Osprey Medical was founded on a catheter-like technology developed at the Baker IDI Heart and Diabetes Institute in Melbourne, Australia. Brandon's team helped transform the idea into a catheter that can capture and remove dye used during common heart procedures, such as angioplasties, to protect against kidney damage. Since Brandon launched this Medical Research Commercialization Fund in July 2007, it has partnered with 32 research institutes and their affiliated hospitals, providing seed funding to 16 startups originating from university discoveries, according to Thompson.

Similar models, such as Raleigh, North Carolina-based BioPontis Alliance (*Nat. Biotechnol.* **29**, 774–775, 2011), are also gaining momentum. In July, the Summit, New Jersey-based biotech Celgene joined BioPontis's group of advisors, which previously included only multinational pharmaceutical companies, such as Merck in Whitehouse Station, New Jersey, Pfizer in New York and Johnson & Johnson in New Brunswick, New Jersey. Julie Goonewardene, associate vice chancellor of innovation and entrepreneurship at the University of Kansas in Lawrence, Kansas, says participating in BioPontis Alliance gives her institution's researchers more control over their discoveries than they might otherwise have—and an opportunity to profit from any products that emerge. "Too often people say, 'Thanks professor so-and-so, see you later'," Goonewardene says. "[BioPontis] offers a much more equitable deal in every way for all parties, both financially and in the collegial way our faculty is included in the process." The University of Kansas also stands to benefit from the connections BioPontis forms between academic centers, Goonewardene says. "They have set it up so they can take expertise from our university and leverage it with another university," Goonewardene says. "They are spreading the upside and the risk across a number of institutions."

Yet another initiative is underway at PureTech Ventures—the Boston venture firm behind Enlight and Knode. PureTech partner David Steinberg says the company just launched the 'Valley of Life' initiative, which he hopes can provide an infrastructure for nonprofit organizations to support academic scientists that have made discoveries related to the diseases those nonprofits are trying to cure. The idea, Steinberg says, is to fill the funding gap, often called the 'valley of death', between government grants for early research and the large sums of money that typically flow into late-stage developments. "Our whole idea is to enable new technologies to escape that academic orbit," Steinberg says. "To close the venture gap, you have to go out and proactively create new companies."

AW

Monoclonals Lego factory

GE Healthcare's biopharmaceutical factory KUBio is the first modular facility to manufacture monoclonal antibodies. The 1,200 m² facility uses GE Healthcare's Ready-to-Process single-use technologies and the company claims total planning, delivery and construction can be achieved in 14–18 months.