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BIOTECH STARTUPS EDITION





IBEX BIOSCIENCES



The annual listing of 10 companies that are at the forefront of providing top Biotech Startup solutions and transforming businesses

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IBEX BIOSCIENCES DISCOVERING LIFESAVING THERAPIES



aryland-based Ibex Biosciences is pursuing an aggressive, innovative path to developing cures for cancer, malaria, and other devastating and intractable diseases.

Murat Croci, Co-Founder and Co-CEO of the early-stage biotechnology, explains: "We are taking high-risk, high-reward approaches that are demonstrating activity against cancer and other urgent conditions."

Ibex is particularly focused on new approaches for treating cancers that are the most difficult to cure, including those of the liver, lung, brain, and pancreas.

Ibex envisions treating cancers via gene therapies using FLNatargeting intrabodies and modified PCBP1. By using an intrabody (i.e., an antibody-based construct expressed solely intracellularly as opposed to being secreted), Ibex is able to target the FLNa protein within the cells, thus disrupting certain functions of the target protein. The modified PCBP1 gene therapy, on the other hand, results in production of a mutated PCBP1 protein that also alters various gene expression control functions of that protein. Both therapies will soon undergo *in vivo* studies to measure efficacy against liver and brain cancers.

Through these gene therapies, lbex seeks to reach intracellular targets instead of targeting proteins





on the cell surface or in the extracellular milieu. "These important approaches in the area of cancer therapies," adds Murat, "do not rely on a toxin or the body's immune system to kill cancer cells, as required with other immunotherapy strategies, but instead offer a safer and more effective treatment."

The company also has two antibodies with therapeutic potential, a camelid-based (VhH) antibody against CD147 and a conventional antibody that targets FLNa. These antibody programs aim to target cancer cells in ways that may not otherwise be amenable for targeting using the company's gene therapy products.

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While these approaches may appear different, Murat stated "Unlike some biotech companies that want to see a complete validation of a concept before they make a significant investment in a project, we have taken the early financial risks to undertake potentially transformative projects." The Ibex team thus seeks

to make a huge impact with these programs using different approaches from what most other companies may entertain. Thus far, it appears to be paying off.

The lbex antibody to CD147 has also been demonstrated to completely inhibit the malaria parasite (*Plasmodium falciparum*) from infecting human red blood cells (RBCs) *ex vivo*. This presents what may be an inexpensive treatment for malaria infections, particularly in the face of expanding parasite resistance to existing drug treatments, thus saving many lives, mostly in children. This antibody is currently undergoing *in vivo* studies at an independent laboratory.

In addition, Ibex is also developing a new regenerative approach through its In Situ Regeneration (ISR) platform. As Murat explains, "For at least a decade, many have tried to make stem cells that are safe, effective and able to regenerate damaged tissue after they have been introduced back into the human body. This has not been very productive and there are now efforts to explore different ways to achieve lasting regeneration. Hence, we have taken a different approach by creating ISR." Ibex believes this platform can be used to regenerate tissues in the body by inducing the generation of certain stem cells directly within the patient, instead of using ex vivo treatment approaches. The stem cells generated will then differentiate naturally into the cell types necessary for healing and repairing of deficits.

With its cancer and infectious disease therapies, and regeneration program, Ibex is striving to develop new and highly effective treatments for various conditions. Ibex intends to complete pre-IND stages of development for its current anti-cancer products and enter the clinic as quickly as possible.