

Developing Multiple Drug Candidates, Utilizing Nanotechnology and Drug Delivery, Immix Biopharma is Leading the Charge to Find a Therapy for Refractory Cancers



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“Cancer is a uniquely adaptable, dynamic disease. It is, essentially, an evolutionary process on the scale of one patient.”
- Dr. Ilya Rachman, MD PhD MBA

Interview conducted by:
Lynn Fosse, Senior Editor
CEOCFO Magazine

CEOCFO: Dr. Rachman, what is the idea behind Immix?

Dr. Rachman: The idea behind Immix Biopharma is to develop treatments that take into account mechanisms of tumor resistance.

CEOCFO: How do you do that?

Dr. Rachman: For way too long the dynamic nature of cancer, as a disease, has been addressed in a static way. Where we currently devise therapies that address each mechanism one at a time, Immix has taken an opposite approach where we are seeking out and addressing mechanisms that underlie the ability of cancers to detect and evade the treatments being used against them.

CEOCFO: Why have you decided this is a viable approach?

Dr. Rachman: We decided it is a viable approach based on several reasons. The first is, as a physician scientist, I have observed a very unfortunate clinical pattern in patients who receive their first, second and third lines of therapy - they would see an initial response and then cancers would inevitably reoccur. Then the patient would unfortunately succumb to the disease. It has become obvious that the core mechanisms of resistance have not been the essential focus of the biopharmaceutical community. At the same time, the literature has been replete with several seminal findings - which point to the existence and specific identity of mechanisms that underlie such resistance. Unfortunately, those findings have not found their way into the pipeline of drug development companies. That was the main motivation for me to start Immix Biopharma.

CEOCFO: What are you working on today?

Dr. Rachman: At present, we are advancing a small but growing pipeline of cancer therapeutics that address the cancer resistance mechanisms using non-toxic and highly effective therapeutic compounds as demonstrated by our publications and our in vivo and in vitro data. We are in the midst of GLP toxicology on our way to our first human trial later this year.

CEOCFO: What is the interaction in the body?

Dr. Rachman: What we built is a smart delivery capsule that encapsulates a combination of substances. One substance, which is a well-known, non-toxic compound that actually turns off a tumor’s alarm signal -- the signal that activates inflammation and induces resistance mechanisms. The second compound is a fraction of a commonly used chemotherapeutic, which activates cell death mechanisms in cancer cells. The delivery capsule is designed in such a way that it selectively accumulates around a tumor mass, largely leaving normal tissues unaffected.

CEOCFO: *What might be a possible side effect?*

Dr. Rachman: If the dose of our therapeutic was increased many times over what the therapeutic goal is, you could run into bone marrow side effects.

CEOCFO: *Your site shows ‘achieving impactful patient outcomes is what guides Immix.’ Does that not guide all researchers? Why is that important to mention?*

Dr. Rachman: This comes from someone who has deep respect for both the researchers and clinicians involved in this challenging area. I think the problem has been that the entire value chain of cancer research has really not been set up in the most productive fashion. What I mean by that is, unfortunately, the people who are in a position to effect the greatest change and design the best, smartest, most effective compounds, are really not in the driver's seat in today's world. Companies that are started by venture capitalists, bankers and financial professionals, by definition, are not ideal generators of most innovative research. Scavenging for sexy, appealing innovations from prestigious Universities by themselves do not produce meaningful products, period. You need product design and product integration. Drugs are no different than the cell phone you carry in your pocket or the car that you drive. Those are not isolated inventions or patents just blindly slapped together; they are highly integrated products engineered in a highly coherent, strategic way of putting them together.

CEOCFO: *What have you found so far that has been surprising?*

Dr. Rachman: The biggest surprise is how inefficient the drug development process is. There is a complete mismatch between the dynamic nature of the disease, which is highly evolvable and responsive, and non-static, versus the development program that is extremely inflexible, highly-inefficient and unnecessarily long.

CEOCFO: *What have you learned from past experiences about moving a product along the regulatory issues and the investment community issues?*

Dr. Rachman: Communication is the main area I find to be the most important. The ability to communicate what the company is doing to the investment community, in order to support the efforts that it's are trying to achieve, is paramount.

CEOCFO: *Are there particular types of cancer that you are looking at first?*

Dr. Rachman: What we are developing will theoretically work for many types of cancer. However, our intention is to start with the most difficult to treat forms of solid tumors such as pancreatic, brain, gastric, lung and metastatic breast cancer. The reason why we want to start with those is because we feel that we have figured out what the magic switch is that will put the resistance mechanisms to sleep and will allow us to demonstrate that you can achieve stable, durable remissions with minimum-to-no toxicity and a robust effect in various tumor types, using this fundamental mechanism.

CEOCFO: *How do you deal with the length of time it takes to do the proper research and to get the funding to bring a drug, should it prove to be effective, to market?*

Dr. Rachman: There is a lot of meditation and exercise. The fact that every month that goes by unnecessarily without the drug being advanced into the clinic we are talking about eighty-to-a-hundred thousand people losing their lives, just in the US alone, it clearly motivates you to move as fast that you can. We are thinking nonstop on how we can facilitate and speed things up and we are constantly looking into various regulatory approaches that would allow us to put these innovative drugs into clinical trials as quickly as possible.

CEOCFO: *Is the medical community aware of what you are working on or is it too early?*

Dr. Rachman: We have received great support from some of my colleagues in southern California, at UCLA and some other research communities. It is not widely known yet. We have published our work in peer-reviewed journals. These publications have been out there for several years. However, it is still quite a novel approach and I would venture to say that the vast majority of oncologists are not aware of this work.

CEOCFO: *What could we expect from you for 2017?*

Dr. Rachman: We expect to make some news with our upcoming human trial at the end of this year. We are truly hoping that we will see the responses that we hope to see, which would demonstrate the validity of this approach and its wide appeal and wide applicability.

CEOCFO: *Why pay attention to Immix Bio?*

Dr. Rachman: Cancer is a uniquely adaptable, dynamic disease. It is, essentially, an evolutionary process on the scale of one patient. It is highly unlikely that any single medicine that does not take this dynamic aspect into account will be effective for anything longer than the current period of four-to-six weeks. Immix has taken an opposite approach - where we are addressing a few key pathways that cancers use to evade and resist all available therapeutics. Those are the main distinguishing characteristics of our approach.