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Revolutionary Indicator Cell Assay Platform (iCAP) shows Promise of Detecting Neurodegenerative Diseases and Cancer Before there are Clinical Symptoms in the Patients

Dr. Robert Lipshutz
Chief Executive Officer

PreCyte, Inc.
www.precyte.net

Contact:
Robert Lipshutz
650-400-8889
roblipshutz@precyte.net

Interview conducted by:
Lynn Fosse, Senior Editor
CEOCFO Magazine

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CEOCFO: ***Dr. Lipshutz, according to your site the vision for PreCyte is a world free from the burden of neurodegenerative diseases and cancer. How are you working on that?***
Dr. Lipshutz: One of the keys to treating both neurodegenerative diseases and cancer is early detection. We are developing tools to enable early detection in ways that have not been done before.

CEOCFO: ***What are you trying? What have you figured out that others have not?***
Dr. Lipshutz: PreCyte has developed the iCAP Assay, which is the Indicator Cell Assay Platform. The idea there is to exploit the fact that cells have evolved for billions of years to be sensitive detectors of their environment. Therefore, we use the cells as transducers to detect the presence or absence of disease in patient's samples. We feel that iCAP will be successful where other methods have failed because cells are sensitive detectors of their environment and they can integrate multiple signals.

CEOCFO: ***How early would you be able to detect cancer or a neurodegenerative disease? Does it vary by disease or type of cancer? Would you give us an idea of how that all works?***
Dr. Lipshutz: The disease where we have the most data and where we can show the most promising results is in Alzheimer's disease. We have demonstrated the ability to detect disease at a state where patients show no clinical symptoms, while there are potentially underlying structural and biochemical changes that have started to take place in the patient. In the case of Alzheimer's disease it has been shown that the development of amyloid plaques can start years before clinical symptoms of the disease.

We can see this at least several years before the presence of clinical symptoms. By clinical symptoms here, I mean that there is a measurable cognitive decline and t demonstrated decline in functions of daily living, the two clinical measures of the presence of Alzheimer's disease.

CEOCFO: ***How does the test work?***
Dr. Lipshutz: We take a patient's sample and indicator cells, which in our case are cells that have been derived from induced pluripotent stem cells; i.e. stem cell derived from fibroblasts or blood cells. These are standardized cells. They are not from the patients themselves. It is standard across all tests. We apply the sample from the patient to the standardized cell for a brief period of time. We then look at the cell to measure a global change in the state of the cell. At the moment we are using messenger RNA to measure that change and that is analyzed using RNA-Seq technology. Eventually we will use a much more compact, faster form such as Taq-Man or the Nanostring type technology. Basically, we see which genes have been up regulated or down regulated as a function of treatment with patient plasma and depending on whether it is from an affected or unaffected individual and we will have its signature. We will match that to determine whether the patient is affected or unaffected.

CEOCFO: ***Do you need to interpret the results or are they somewhat clear cut? Maybe there is a range, but once the test is done do you look at it and say, "There are fifteen of these and ten of these"?***
Dr. Lipshutz: The test will yield a score which will be determined through an algorithm. That score will have a range and the clinician can look at and say, "This gives you a likelihood of being an affected patient. The clinician will then be able to make a decision regarding treatment.

CEOCFO: ***I realize it is early on, but is the medical community aware? Are the people receptive? Is the concept in line with current medical thinking?***
Dr. Lipshutz: I think the idea of early detection in Alzheimer's disease is well accepted. It is something that has to be done if the emerging treatments for Alzheimer's disease are going to be successfully used. If you follow the Alzheimer's disease therapeutics area, there are some very promising compounds in late stage trials. They are all based on targeting early stage disease or pre-symptomatic patients. The idea of trying to treat patients who have emergent Alzheimer's disease is clearly not working. The community recognizes that in order to be able to successfully deploy these kinds of treatments they do need an early detection modality. The best current alternatives to this today are to either use very expensive imaging with contrast agents or to look in patient's cerebral spinal fluid using a spinal tap followed by an ELISA type assay; both of which are expensive and invasive technologies. Therefore, it is well accepted that more easily scalable early detection modalities are needed.

CEOCFO: ***Where are you in the process?***
Dr. Lipshutz: We are a discovery stage company. We have identified a preliminary signature. We are in the process of optimizing and validating that signature.

CEOCFO: ***What have you found so far that was unexpected? Has it been what you anticipated?***
Dr. Lipshutz: I think we are moving down a path that we expected. We have been able to show, with early results, that the concept works. Our

early results have us in a range of, say, in the eighties for sensitivity and specificity and we know that was not sufficient, but those were the first sets of conditions that we chose to use to try out the assays. Based on that we have gone into an optimization phase to basically improve the performance of the assay by adjusting conditions and various analytic methods. We have done that. We are actually just finishing that up and we have seen significant improvement there, really meeting what our goals were and even exceeding some of our expectations. Therefore, we have sensitivity and specificity in the nineties now for the performance of the assay. We are about to embark on a validation stage to independently validate the performance of the assay in a laboratory setting.

CEOCFO: ***What is your funding situation?***
Dr. Lipshutz: We have been funded with a very modest amount of founder investment and then we have raised significant non-dilutive funding to support the research and development activities with the company to date. We have not taken in a seed round yet, but it is something we are working on actively.

CEOCFO: ***Clearly Alzheimer's is of interest. What is the feeling in the investment community? I hate to say that some diseases are almost cyclical where some diseases are in and out of favor, but I do not know a better way to describe it. Therefore, what is the interest today? Is it an area that investors are paying attention to or are they not really looking at the early stage companies very much these days?***
Dr. Lipshutz: We have been talking to investors and the feedback that we have gotten was that investors were interested, but they wanted to see us achieve the optimization results that I recently just discussed with you. Therefore, we will be going out in the beginning of next year to actively re-engage with our new potential investors and the people we have spoken to before. Independently of us specifically, going back a year or two ago, investors were a little less receptive to looking at Alzheimer's disease. However, the fact that there have been positive trends in treatments showing up from Merck and from Biogen is very positive and has people looking at this area in a more favorable way.

CEOCFO: ***What have you learned from your background in the industry that has been helpful so far and that gives you a bit of an edge as you continue with the process, both from the scientific part and the business and funding part?***
Dr. Lipshutz: This technology was taken out of a research laboratory at the Institute for Systems Biology (ISB) and while there was exciting science and very promising technology, I think my experience was really in seeing assays like this taken from the research bench out into the translational area and then getting it implemented. It is really important to be able to link up a great scientific idea with a precise medical need and how physicians and clinicians will actually implement that in real world practice. You have to really understand how it is going to be fitted in with what the decision is that a physician on the ground with a patient is going to make and how will it change the course of treatment. If you cannot give them a decision to make and change what decision they will make you are not going to get traction and there is no point in going forward. I think this is something that I have learned over the years and time and again seen in where great assays are able to be used. Then you have to

deliver substantive evidence to the clinician; clinical evidence of the performance of your assay.

CEOCFO: ***There are many companies doing lots of research. Why does PreCyte, Inc standout?***
Dr. Lipshutz: We are doing something novel. There are many, I would say, trendy ideas for how to look at assays. You can look at circulating DNA, look at circulating RNA, and there are a number of things that people are trying and they are trying to push forward. All of them have their challenges. I think the idea of using cells as biosensors is novel and classical at the same time. It is novel in that it is not something that a lot of people are doing, but it is classical in that it goes back to ideas that have been used for years in science. I think a good example of that might be the old pregnancy tests, which were based on using rabbits at one time, and later on frogs. In effect, the rabbit was the transducer for the signal. At a time when there were no existing technologies to detect the signal of pregnancy in a woman's blood or urine, the rabbit basically provided a physiological system in which to amplify,detect, and read out for the presence of that. We are going back to idea of a biological system and exploiting that, but in a twenty first century model, using the Indicator Cell Asset Platform, iCAP. We have taken the idea of a biological system and reduced it from an animal to a standardized indicator cell. We have changed the read out from an anatomical dissection to using standardized modern molecular readouts; in this case, RNA technology. Therefore, I think it is a platform that can be broadly applied. We have started to use it in neurodegenerative disease, because it is a significant unmet need. We have some early work in lung cancer that looks similarly promising. I think there is a really interesting and important unmet need there. Patients will frequently present, after lung cancer screening by a spiral CT or other kind of imaging, with nodules that are too small to be obvious surgical candidates, but too large to ignore. However, at the same time eighty percent of them are benign and there needs to be something short of doing a very expensive biopsy type intervention to decide if the patient really needs to move forward down the treatment path or down the biopsy path. We have got some promising results that we can get a blood test based on the iCAP Platform to meet that need. Therefore, it demonstrates the potential flexibility of the platform across a wide range of clinical indications.