

Kidney Cancer Program at City of Hope

A Year in Review

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Developing More Targeted Therapies

My research efforts have included the development of Sunitinib and Sorafenib, two therapies recently approved by the Food and Drug Administration; and Temozolomide, another recently-approved therapy designed to stop kidney cancer cells from multiplying by denying cells access to blood vessels that provide nourishment. This drug may offer new hope for patients with poor prognoses. Resources made possible by generous friends like you have made these targeted drug studies possible.

Hua Yu, PhD, Professor, Division of Cancer Immunotherapeutics and Tumor Immunology (CITI), has identified a key target for future RCC therapy. This target — Stat3 — not only promotes tumor cell proliferation and survival, it also helps tumors evade immune detection and destruction. Dr. Yu is currently working to develop a therapy to block Stat3 — a therapy that would benefit patients diagnosed with RCC.

In related work, Richard Jove, PhD, Deputy Director, Comprehensive Cancer Center, and Director of the Beckman Research Institute, has demonstrated that Sorafenib inhibits Stat3, and leads to the death of tumor cells in certain brain cancers. In the year to come, we will fund a post-doctoral scientist in the Beckman Research Institute under the direction of Professor Yu to concentrate their efforts on this important pathway in renal cell carcinoma. It is our belief that this pathway may bring together antiangiogenesis and the immune regulation of kidney cancer to identify new therapeutic strategies against this disease. Your support of research conducted by Dr Yu will help lead to these discoveries.

Using the Body's Immune System to Heal

Michael Jensen, MD, Associate Chair, Division of CITI, is developing technology to take T-cells from a patient and genetically engineer them to target and eradicate the patient's cancer. Using Dr. Jensen's pioneering technology, we have been able to isolate immune cells from a blood sample and re-engineer them to seek out and attack kidney cancer cells. We will be supporting this research in Dr Jensen's laboratory to bring this individualized approach to kidney cancer immunotherapy by identifying the proper surface markers on the kidney cancer cell and then targeting this marker with the immune system for destruction.

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This approach will then be combined with Professor Yu's analysis to augment the immune response to kidney cancer by first treating with agents that reverse immune suppression and make the patient more likely to benefit from immune targeted treatment. You are helping to support Dr. Jensen's exciting and promising initiatives that are focusing these efforts in kidney cancer

Collaborations Advance Discovery

Dr. Jove will further his efforts of realizing new therapies that reduce the pain and suffering associated with kidney cancer. He will continue his investigations of Stat3 targeting with Sorafenib to determine if this therapy can induce the death of RCC cells.

Furthermore, I will collaborate with Drs. Jensen and Yu to harness the power of immunotherapy and the promise of highly targeted therapies to all that we know about kidney cancer. As a result of our combined efforts, we hope to silence the molecule that creates cancer, and also use the body's own immune system to attack and destroy kidney cancer cells. We plan to exploit all that we know from our clinical trials using T-cells for lymphoma and brain tumors for use in trials for RCC patients. We hope to soon begin the required pre-clinical development to prepare for first-in-human RCC T-cell therapy clinical trials at City of Hope.

Investing in People

I am highly motivated to dedicate significant resources to nurture the development of today's best young scientists into tomorrow's world class investigators. With my oversight and direction, these scientists will pursue the leading-edge work that promises healing — and cures — for people everywhere. As noted above, we have already created and filled a postdoctoral fellowship in the laboratory of Dr. Yu. We plan to also establish a 3-year postdoctoral fellowship in Dr. Jensen's laboratory in the next month.

The Gift of Hope

Your generosity has been instrumental in the progress made in the Kidney Cancer Program. Your partnership strengthens our efforts and heightens our optimism as we continue to develop powerful new weapons to fight this devastating disease. Thank you so much for your support. With your continued help, we can do much more. Together, we will build a program of excellence for RCC — a program that improves the quality-of-care and the quality-of-life for kidney cancer patients everywhere.