

SCRIPPS FINDS FLAW IN CANCER DRUG PATENT

Chemical sleuthing
puts ownership of
treatment in doubt

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Chemical sleuthing by scientists at The Scripps Research Institute in La Jolla has put ownership of a potential cancer drug in doubt — and thus opened a door of opportunity for a San Diego biotech company.

The experimental medication, patented by Oncoceutics in Pennsylvania, is about to enter clinical trials. But the laboratory of Kim Janda at Scripps found that Oncoceutics made an elementary mistake: It provided a wrong structure for the drug, called TIC10, in its patent documents.

Janda and his colleagues determined the drug's correct structure, and their institute then applied for a different patent and licensed it to Sorrento Therapeutics in Sorrento Valley.

Sorrento Therapeutics wants to collaborate with Oncoceutics to bring the drug to market, said Jeff Osteen, SEE PATENT • C2

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counsel for the local company.

Oncoceutics did not return calls for comment Thursday, but has told the trade publication Chemical & Engineering News that the issue doesn't invalidate its patent.

TIC10 causes cancer cells to self-destruct, a process called apoptosis. It turns on a gene that makes a protein called TRAIL; that molecule is listed in a repository maintained by the National Cancer Institute.

Janda said he was interested in studying how TRAIL might work in combination with another potential cancer medication. So he asked one of his postdoctoral researchers, Jonathan Lockner, to make a batch of TIC10 for testing.

"It didn't work," Janda said.

He turned to another researcher in his lab, Nicholas Jacob, who took a deeper look at a paper published in the journal Science Translational Medicine describing TIC10. From that analysis, Jacob

and Janda concluded that Oncoceutics had only bought a sample from the National Cancer Institute instead of doing its own synthesis of the drug based on its new formulation.

Had the company synthesized the molecule in its own lab, Janda said, it likely would have discovered the same problem that he did.

To test this theory, the Janda lab ordered a sample from NCI. It worked.

Janda's team found that the compound patented by Oncoceutics was very similar to the one from the cancer institute, "but it wasn't spot-on," Janda said.

Jacob conducted more testing and revealed that the two molecules had differing structures.

Janda's group described its findings in a paper published this week in the journal *Angewandte Chemie*.

Karen Dow, a biotech intellectual property attorney in the San Diego office of Sughrue Mion, said it was

virtually unprecedented for a mistake like Oncoceutics' to go undetected for so long in drug development.

But Dow also said the mistake may not be fatal to the Oncoceutics patent, depending on how the patent is written and what claims it makes.

The whole situation was covered by the popular chemistry blog "In the Pipeline."

"As a chemist, you'd expect me to say this, but this whole problem was caused by a lack of input from a skilled medicinal chemist," wrote blog author Derek Lowe.

Janda agreed, saying the larger lesson to be learned is that biotech and pharmaceutical companies should give their chemists more respect. "Chemistry in pharmaceutical companies these days has taken a real backseat," Janda said. "Lots of chemists have been laid off recently, and there's a real place and need for chemistry."

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