Samuel Danishefsky

As part of a commitment to seek new and better treatments for cancer patients, Memorial Sloan Kettering Cancer Center and Bristol-Myers Squibb are collaborating to bring a potential new cancer drug called iso-fludelone, or KOS-1803, into clinical trials. Under the arrangement, Memorial Sloan Kettering will conduct a Phase I clinical trial, and possibly a Phase II clinical trial, for iso-fludelone. Iso-fludelone is part of a new class of potential anticancer compounds known as fludelones. The first fludelones were discovered by scientists at Memorial Sloan Kettering and are under an exclusive license to Bristol-Myers Squibb.

Iso-fludelone is an epothilone compound, a class of molecules that has been widely studied in the laboratory of Memorial Sloan Kettering chemist Samuel J. Danishefsky. Epothilones' potential as anticancer agents in preclinical models was established by Memorial Sloan Kettering pharmacologist Ting-Chao Chou.

Through chemical synthesis and modification of the compounds, Memorial Sloan Kettering scientists were able to identify the key structural features that are necessary for their biological activity, and then through "molecular editing" manipulated the compounds to improve their properties. Iso-fludelone shows promise as an anticancer agent at the preclinical level.

In a variety of mouse models of cancer, iso-fludelone eliminated, without recurrence, many solid tumors, including lung and breast tumors that were resistant to other cancer drugs.

"The development of new epothilones by Sam Danishefsky and his colleagues is the product of creative chemistry coupled with careful biological studies," said Thomas J. Kelly, Director of the Sloan Kettering Institute. "The establishment of this important industry-academic collaboration with Bristol-Myers Squibb will enable us to move this investigational compound into the clinic."

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