Although European Laboratories Welcome Free Use of BRCA2, Access Still in Question

While researchers in Europe cheered the February announcement that the charity Cancer Research U.K. would allow publicly owned laboratories to freely use its newly obtained European patent on the cancer susceptibility gene BRCA2, many are uncertain what this will mean in practice.

The picture is muddied by the fact that both Cancer Research U.K. and Myriad Genetics of Salt Lake City own separate patents on the gene. Myriad, in fact, also has patents on BRCA1 in both the United States and Europe. Its patents give the company rights to diagnostic testing and commercial laboratory services in addition to potential therapeutics based on the genes’ sequences. Cancer Research U.K.—through its subsidiary Cancer Research Technology (CRT)—already held the U.K. patent because much of the BRCA2 sequence was first published in 1995 by a group led by Michael Stratton, Ph.D., at the Institute of Cancer Research in London and was based on research funded by what was then the Cancer Research Campaign.

“The message from [Cancer Research U.K.] is good news for diagnostic testing laboratories,” said Gert Matthijs, Ph.D., head of the laboratory of molecular diagnostics at the University of Leuven in Belgium. “The announcement means that the European genetic diagnostic labs in the public health sector will be able to conduct testing without additional costs.”

“I would like to see other European researchers and agencies follow Cancer Research U.K.’s example,” said Charis Eng, M.D., Ph.D., director of the Clinical Cancer Genetics Program at the James Comprehensive Cancer Center at Ohio State University in Columbus, who has argued that Myriad’s stranglehold on BRCA1 testing in the United States and Europe could result in skyrocketing costs for the field of cancer genetics.

According to Matthijs, the patent awarded Cancer Research U.K. by the European Patent Office (EPO) essentially covers the use of BRCA2 for genetic testing, even if it contains only a part of the sequence, and covers the entire gene and all possible mutations. Both patents are involved, then, in BRCA2 sequencing and diagnostics. A laboratory wanting to study the gene would normally have to pay a license fee, but CRT has waived any such fee for public laboratories.

Regardless, most European public laboratories have more or less ignored Myriad’s European patents, Matthijs said. They continue to perform their own testing rather than send samples and pay expensive fees to Myriad, arguing that the company’s monopoly on the use of the genes for testing was costly and stifled research. Myriad has argued that it offers the most cost-effective, accurate testing available, and it is simply protecting its investment and patent rights.

In 2001 and 2002, respectively, two formal oppositions to the three Myriad BRCA1 European patents were filed with the EPO by two French institutions, including the Paris-based Curie Institute, and by a consortium of research centers, genetics societies, and even governments. (See News, Vol. 95, No. 1, p. 8, “European Groups Oppose Myriad’s Latest Patent on BRCA1.”)
The groups claimed, among other things, that the Myriad patents lacked several criteria for patenting, such as “novelty” and “inventive step,” the latter meaning an invention cannot be obvious. In addition, patenting something unique such as a gene means no one can improve on the product.

A similar consortium of European centers and research institutes last year filed an opposition against the BRCA2 patent, again in parallel with the French. “One of the reasons was to clarify the unusual situation involving the two patents on one gene, which is very confusing,” said Matthijs. “The other reason is that the same arguments as to BRCA1 apply: there was an international consortium that has worked together on the identification of the gene, and in that context, the cloning itself does not constitute an invention in our view.”

For now, it is unclear if CRT’s announcement has really changed anything, Matthijs said. “No one knows what the practical result will be,” he said. “In principle, one would need a license from both patent owners to use the invention. But it is very strange and very unusual, especially if one patentee is ready to offer a (royalty-free) license and the other is not.”

“Myriad and CRT must have an agreement on the use of the patents for genetic testing,” including royalties, said Dominique Stoppa-Lyonnet, M.D., Ph.D., head of the department of genetics of the medical division of the Curie Institute.

Matthijs said the discussion over the status of BRCA2 patents illustrates the need for improved legislation on gene licensing in Europe. In May, the EPO will meet in Munich to rule on the validity of the opposition to the first of Myriad’s European patents. Stoppa-Lyonnet is cautiously optimistic about the European opposition’s case. “If the first Myriad patent on BRCA1 is revoked, then now with the free licensing offered by CRT, we may be able to work out solutions for both BRCA1 and BRCA2,” she said.

“Under the existing law, even resolute opponents of patenting genes will have to accept paying royalties,” Matthijs said. At the same time, “A novel system for rewarding patent owners may have to be put in place.”

The French are trying. They are seeking a compromise in promoting so-called compulsory licensing in which a judge decides on licensing to various European laboratories and royalties based on the “market.”

—Steven Benowitz