## PEOPLE


Susan Merrell

**Elizabeth Blackburn, PhD,** was appointed president of the Salk Institute for Biological Sciences in La Jolla, CA, effective January 1. Previously a professor in the Department of Biochemistry and Biophysics at the University of California, San Francisco, she succeeds William R. Brody, PhD.

In 2009, Blackburn shared the Nobel Prize in Physiology or Medicine with Carol Greider, PhD, and Jack Szostak, PhD, for uncovering how chromosomes are protected by telomeres, as well as discovering the enzyme telomerase, which maintains telomere ends and thereby plays a key role in cell replication, cell aging, and human cancers.

Blackburn served as president of the American Association for Cancer Research (AACR) from 2010 to 2011, and on the AACR Board of Directors from 2006 to 2009. In addition to the Nobel Prize, she has received numerous other awards for her scientific accomplishments, including the 2006 Albert Lasker Award for Basic Medical Research.

## Multiple Myeloma Gets Three New Drugs

Patients with multiple myeloma have seen their therapeutic arsenal expand considerably in the last few weeks, with the FDA approving three new therapies: ixazomib (Ninlaro; Takeda), daratumumab (Darzalex; Johnson & Johnson), and elotuzumab (Empliciti; Bristol-Myers Squibb). Ixazomib is the first oral proteasome inhibitor, and daratumumab and elotuzumab the first two monoclonal antibodies for this disease.

Ixazomib was approved in combination with lenalidomide (Revlimid; Celgene)—a standard therapy for multiple myeloma—and the steroid dexamethasone, based on data from the phase III TOURMALINE-MM1 study. In this trial, 722 patients were randomized to receive lenalidomide plus dexamethasone, with or without the new proteasome inhibitor. Patients in the ixazomib-containing arm had a significantly improved PFS—20.6 months, versus 14.6 months for the rest.

"This is the first all-oral regimen for multiple myeloma, which will create effective outpatient treatment options," says Kenneth Anderson, MD, director of the myeloma program at Dana-Farber/Brigham and Women's Cancer Center in Boston, MA. How ixazomib works is not fully understood, but its actions include "blocking the breakdown of abnormal immunoglobulins, inducing stress responses, and triggering myeloma cell apoptosis," Anderson explains.

Daratumumab targets CD38, an antigen highly expressed on multiple myeloma cells. It induces antibody-dependent cellular cytotoxicity (ADCC) and complement-dependent cytotoxicity (CDC), both of which mediate tumor destruction.

The drug's approval was based on results from the phase II SIRIUS study, which enrolled 106 patients whose disease did not respond to three or more prior therapies, including standard options like bortezomib (Velcade; Takeda) and lenalidomide. The objective response rate (ORR) to daratumumab was 29%, with three patients experiencing a complete remission. The median progression-free survival (PFS) was 3.7 months, and 65% of patients survived at least 1 year.

Anderson notes that "although CD38 is expressed elsewhere—for instance, on endothelial cells and about half of hematopoietic progenitor cells—daratumumab's therapeutic index is nonetheless very favorable." The drug was also well tolerated by study patients.

Elotuzumab has a dual mechanism of action: It targets the antigen SLAMF7 on multiple myeloma cells, mediating damage through CDC and ADCC, and it activates SLAMF7-expressing natural killer cells, thereby increasing tumor destruction. In the phase III ELOQUENT-2 study—which randomized 646 patients to receive lenalidomide plus dexamethasone, with or without elotuzumab—the median PFS for those in the elotuzumab-containing arm was extended by 4.5 months, and the ORR was 78.5%, versus 65.5% in the other arm. These data led to elotuzumab's approval in combination with lenalidomide and dexamethasone.

Complete results from all three studies were presented at the annual meeting of the American Society of Hematology, December 5–8, in Orlando, FL.

Anderson thinks monoclonal antibodies "will likely contribute to a new standard of care for multiple myeloma." Other immunotherapies, including therapeutic vaccines and checkpoint inhibitors, are also being actively investigated, and he considers combination approaches—therapies that selectively target tumor cells paired with ones that amplify the immune response—"most exciting."

"The treatment paradigm for multiple myeloma continues to evolve, with patient survival already extended three- to four-fold," he observes. "It's a new world, in terms of being able to stimulate autologous immunity against this disease." *–Alissa Poh* ■

## Huge Data-Sharing Project Launched

Aiming to serve as a catalyst for the advancement and adoption of precision medicine in oncology, the American Association for Cancer Research (AACR) has launched an international initiative known as AACR Project Genomics, Evidence, Neoplasia, Information, Exchange (GENIE). The venture will pool existing and future next-generation clinical sequencing data with longitudinal clinical outcomes and related pathology reports from several institutions in the United States, Canada, and Europe.

"The need for such a project is great," said Charles L. Sawyers, MD, a physician-scientist at Memorial Sloan Kettering Cancer Center (MSKCC) in New York, NY, and one of several researchers who unveiled the project on November 6 at the AACR-NCI-EORTC International Conference

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