NOTED

- **The U.S. Food and Drug Administration (FDA) approved Celgene's Abraxane (paclitaxel protein-bound particles for injectable suspension) to treat patients with metastatic pancreatic cancer,** in combination with Eli Lilly's gemcitabine.
- **Amgen announced plans to buy Onyx Pharmaceuticals of South San Francisco, CA, for $10.4 billion.** Onyx's Kyprolis (carfilzomib) is approved by the FDA for treating multiple myeloma. The company's other assets include partnerships with Bayer HealthCare Pharmaceuticals on Nexavar (sorafenib), approved for treating liver cancer and kidney cancer, and Stivarga (regorafenib), approved for treating colorectal cancer and gastrointestinal stromal tumors.
- **Roche decided to relinquish patent rights to its breast cancer drug Herceptin (trastuzumab) in India, opening the market to generic versions**. The move, which follows months of debate about the cost of Herceptin, precludes the Indian government from issuing a compulsory license to another manufacturer. Herceptin currently faces no competition in India.
- **The median cost to bring a drug to market was $350 million for companies that launched one drug in the past decade, but rose to $5.5 billion per drug for companies that brought more than eight drugs to market** in that time, according to an analysis in *Forbes*.
- **With every daily drink of alcohol a girl or woman consumes before her first full-term pregnancy, she increases her lifetime risk of breast cancer by 13%** (JNCI 2013 Aug 29. [Epub ahead of print]). The analysis is based on a review of the health histories of 91,005 mothers enrolled in the Nurses' Health Study II from 1989 to 2009.
- **The X Prize Foundation cancelled its Genomics X Prize competition, explaining that genomic sequencing technologies have advanced so quickly that the prize no longer offered a suitable goal**. Announced in 2006, the competition offered a $10 million reward for accurately and rapidly sequencing 100 whole human genomes at a cost of $10,000 or less per genome.

continues, noting that codeveloped drugs "present an unrealized opportunity" for pharmaceutical companies. "Hopefully, it will encourage companies to move such work forward." ■

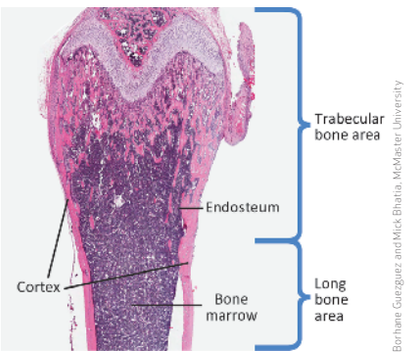
For HSC, Location Matters

Harvesting hematopoietic stem cells (HSC) from the ends of bone—the trabecular area—yields a wealth of cells with superior regenerative and self-renewing abilities, according to research published in August (Cell Stem Cell 2013;13:175–89).

"It's similar to a bottle of milk—if you want the cream, you skim it off the top," says study lead author Mickie Bhatia, PhD, professor and scientific director of the McMaster Stem Cell and Cancer Research Institute in Hamilton, Ontario, Canada.

Bhatia's team harvested cells from distinct areas of bone from humans and immunodeficient mice engrafted with human HSCs. Compared with the long bone area, trabecular bone contained higher numbers of HSCs, but the HSCs from both the human and the mouse samples had different molecular and functional characteristics. Among the functional differences between cells from the two locations, transplants done in mice showed that stem cells from trabecular bone had a greater ability to engraft in the marrow of the recipient. One likely reason: Bone-forming osteoblasts in the trabecular area exhibit higher expression of Notch, a protein thought to be important for stem cell renewal. (Osteoblasts play a key role in regulating HSCs in bone marrow.)

"This paper shows that the best stem cells like to live near trabecular bone surfaces, close to the bone cortex, instead of in endosteal regions in the long bones or deep within the bone marrow space, near blood vessels," says Edmund Waller, MD, PhD, associate director of the Bone Marrow and Stem Cell Transplantation Center at Emory University's Winship Cancer Institute in Atlanta, GA, who was not involved in the research. "If you think of stem cells as the seeds and the bone as the soil, the trabecular bone provides the most fertile soil," he says.



Borhane Guezguez and Mick Bhatia, McMaster University

Hematopoietic stem cells harvested from locations near the bone cortex in the trabecular bone area seem to have superior regenerative and self-renewing abilities, according to a study published in *Cell Stem Cell*.

Pending further validation, Bhatia's findings might affect how surgeons harvest HSCs for transplants, says Waller. "If you put a needle into someone's hip to draw out stem cells, you may want to collect cells just after you go through the bone's hard cortical surface, rather than extracting them from deep within the bone," he says.

When considered with a 2012 *New England Journal of Medicine* paper, these findings might further encourage transplants of HSCs from bone rather than from peripheral blood, which is currently the most common source for U.S. procedures. Last year, a multicenter, randomized trial comparing HSCs from peripheral blood with those from bone marrow from unrelated donors to treat leukemia and related diseases found similar survival rates after 2 years (N Engl J Med 2012;367:1487–96). Although peripheral-blood HSCs had a lower risk of graft failure, they conferred a significantly higher risk of chronic graft-versus-host disease, which can be extremely debilitating, notes Waller, possibly causing the recent slight shift in preference among some doctors for HSCs taken from bone marrow. ■

For more news on cancer research, visit *Cancer Discovery* online at http://CDnews.aacrjournals.org.