IN brief

Phase zero launch

Scientists at the US National Cancer Institute (NCI) in Bethesda, Maryland, have conducted the first phase 0 oncology trial, which they claim could help accelerate drug development. The NCI phase 0 study tested a single dose of Abbott's small-molecule candidate ABT-888 in 13 patients with advanced cancers. The results, obtained in five months, proved that the drug from the Abbott Park, Illinois, company is well tolerated and inhibits its target—the poly(ADP-ribose) polymerase (PARP) enzyme—in tumor samples and blood cells. In a phase 0 study, a small number of patients is treated with nontoxic microdoses or a single dose of a new drug to obtain pharmacodynamic and pharmacokinetic data. Phase 0 trials can help identify and discard inactive drugs early in the process, ultimately improving success rates. But they are unlikely to become routine in cancer drug development, says Susan Galbraith, vice president oncology discovery medicine and clinical biomarkers at Bristol-Myers Squibb. "There are other approaches that can achieve the same goals faster and for less cost." Nicola Curtin, professor of experimental therapies at Britain's Northern Institute for Cancer Research (Newcastle), says a phase 0 study can be rolled in with a phase 1 to obtain the same data. For monoclonal antibodies, microdosing may present a challenge. "Traditional antibodies have a 1–2 week half-life so one dose of those drugs would give equivalent exposure to multiple doses of a small-molecule drug," Galbraith points out. *Emma Dorey*

Pig patent revolt

Germany, home to the biggest swine population in Europe, is up in arms over a patent covering a marker-assisted test to breed meatier pigs. The patent covers a screening method to identify a polymorphism in the leptin receptor gene, useful for selecting animals for stockbreeding. The patent, originally filed with the EPO by Monsanto, was granted last July to Newsham Choice Genetics, the West Des Moines, Iowa–based company that in 2007 acquired Monsanto's porcine genetics subsidiary. The gene sequences and the test kit itself, although originally included in the application, were not part of the patent granted by the European Patent Office (EPO). Several notices of opposition have been filed, mainly from nongovernmental organizations and individuals, not by competing companies. On April 15—the day before the deadline for objections—activists and farmers demonstrated outside the EPO's Munich office, protesting about paying royalties to a US firm. "This seems like a complaint from the 18th century," says Larry Schook, co-chairman of the Swine Genome Sequencing Consortium, which will be completing its sequencing effort by August. According to Schook, breeding companies often sell germplasm with dubious genetic merit at a premium. Marker-assisted tests will offer an actual genetic benefit rather than a proposed one. Gordon Wright, from the Chartered Institute of Patent Attorneys in London, speculates the company "will be aiming to enforce the patent against commercial [kit] suppliers rather than breeders." *Anna Meldolesi*

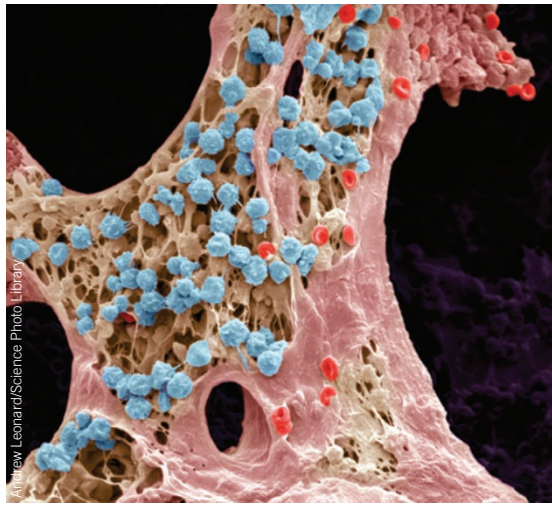
US regulator wades into stem cell therapies for heart disease

The US Food and Drug Administration's (FDA) draft guidance on cell therapy for cardiac disease has been given a muted welcome by clinicians and industry—not least because it may bolster the reputation of a field that thus far has enjoyed more than its fair share of charlatans and quacks. One impetus for the April release of the guidelines is problems cropping up with existing bone marrow–-derived cell therapies for heart disease in the clinic. "My intuitive sense is that they'd had some issues [with companies doing cell therapy heart research] already," says attorney Edward J. Allera, chairman of Buchanan Ingersoll & Rooney's food and drug group in Washington, DC. "Educated players understood this was coming," he says.

Elmar R. Burchardt, vice president of medical affairs for Aastrom Biosciences, a regenerative medicine company based in Ann Arbor, Michigan, has a different take. "It could be a sign that the field is maturing—that the FDA thinks this is an important emerging field," he says.

Clinical work with cell therapy in heart disease has been under way in Europe since 2001, although "in [the US], it took a little longer," Burchardt points out. In that year, a pair of seminal articles (*Nature* **5**, 701–705, 2001 and *Nat. Med.* **7**, 430–436, 2001) established that bone marrow–derived cells could be used to repair damage after heart attacks. Data from the European studies surfaced in 2003, and much work afterwards went into defining the target populations. Should cells be used alone or as an add-on procedure with bypass grafting? At which stage of the disease should transplants be considered? When and how should the bone marrow–derived cells be injected? Are selected cell types better than unselected bone marrow? Meanwhile, the FDA "had a lot of hearings," grappling with uncertainty over matters as basic as whether trials should be controlled or open label.

The guidance laid out by the agency's Center for Biologics Evaluation and Research is aimed at steering preclinical and clinical studies (**Table 1**), and states the information needed to back up investigational new drug applications. "It's a very different game [now]," Burchardt says. The game's rules to be, or at least a step toward them, are outlined in the nonbinding recommendations drawn up by the agency, and concerned parties have until July 1 to submit their remarks. Aastrom is not tipping its hand regarding how the company will respond, though Dan Wolin, the company's manager of regulatory affairs,



Bone marrow is a rich source of adult stem cells. A number of companies are delivering such cells for cardiac repair.

SELECTED research collaborations

Partner 1	Partner 2	$ (millions)
Kyowa Hakko Kirin (Tokyo)	Sanofi-Aventis (Paris)	315
Isis (Carlsbad, California)	Alnylam (Cambridge, Massachusetts)	31
Institute of Ophthalmology, University College (UCL) London	Pfizer Regenerative Medicine (Cambridge, UK)	*

*Not disclosed