

favors the developer of either the original drug or the follow-on version—most often turning on how the agency defines terms like ‘exclusivity’ and ‘bioequivalence’.

The high costs involved in planning, conducting and analyzing the results of clinical trials will prevent a stampede to make biosimilars; in fact, several major drug companies are pursuing the development of biosimilars as though they were completely new and distinct from the original products and have expressed their intention to submit a new Biologics License Application to obtain marketing approval. Thus, the savings to federal entitlement programs, insurers and patients will surely be far less than some of the hyperbolic predictions made by politicians and others.

Eventually, the availability of biosimilars will spur competition and reduce prices.

Because of advances in technology, some of the new products may even be better than the original, brand-name drugs. But for the time being, the new regulatory pathway for most biosimilars will not be significantly abbreviated nor will it significantly affect skyrocketing healthcare costs.

#### COMPETING FINANCIAL INTERESTS

The author declares no competing financial interests.

*Henry I Miller*

*The Hoover Institution, Stanford University, Stanford, California, USA.*

*e-mail: henry.miller@stanford.edu*

1. Department of Health and Human Services. *Fed. Regist.* **75**, 61497–61501 (2010). <<http://edocket.access.gpo.gov/2010/pdf/2010-24853.pdf>>
2. Kozlowski, S. *et al. N. Eng. J. Med.* **365**, 385–388 (2011).
3. Woodcock, J. *et al. Nat. Rev. Drug Discov.* **6**, 437–442 (2007).

existing biobanks has been considered as a specific strength of European research<sup>4,6</sup>. Their optimal use, however, is constrained by fragmentation, a lack of harmonization, incompleteness and a lack of overview of existing resources<sup>1,3</sup>.

Planning of the European Biobanking and BioMolecular Resources Research Infrastructure (BBMRI) was initiated in 2008 (refs. 1,2). The following are among its goals: first, to make data and materials rapidly and widely available to researchers; second, to provide tools to improve the quality of biobanks on a broad scale; third, to provide an operational concept for a sustainable infrastructure; fourth, to deliver standard operating procedures; and fifth, to suggest codes of conduct.

An online catalog has been established for the collection and presentation of data describing the majority of European biobanks. Based on a format originally provided by The Public Population Project in Genomics (P3G) observatory (<http://www.p3gobservatory.org/>)<sup>8</sup>, BBMRI developed a core questionnaire to collect essential information from European biobanks, such as objectives, number and type of samples, and specific strengths. The core questionnaire was supplemented with a total of six additional questionnaires covering the topics of (i) sample description, (ii) resources and methods, (iii) law and ethics, (iv) IT solutions, (v) research outcome and (vi) costs and funding (Supplementary Table 1). In 2008 and 2009, the questionnaires were sent to the representatives of institutions and biobanks who had expressed interest in contributing to this project. Plausibility checks were applied to the completed questionnaires. By March 2011, the catalog included data from 63 population-based and 219 clinical biobanks located in 27 countries (Supplementary Fig. 1), together representing more than 20 million samples (Fig. 1 and Supplementary Table 2). We defined ‘population-based’ biobanks as large repositories of samples from volunteers in the general population, with and without disease, such as random cohorts or population isolates. ‘Clinical’ or ‘disease-oriented’ biobanks are derived from clinical individual-sample collections organized around a specific disease or disease group. We counted each biological specimen taken from a specific tissue at a particular date as a sample.

The catalog can be accessed via the BBMRI website (<http://www.bbMRI.eu/index.php/catalog-of-european->

## Stem cell funding in the Midwest

### To the Editor:

We noticed that the news story “Stem cell funding resumes” by Laura DeFrancesco (*Nat. Biotechnol.* **29**, 468, 2011) contained the final sentence “...efforts continue in at least two states, Minnesota and Oklahoma, to prohibit hESC [human embryonic stem cell] research.” This does not accurately describe the status of hESC research in Minnesota today.

There were unsuccessful legislative efforts in Minnesota this past session to prohibit and restrict funding for somatic cell nuclear transfer (SCNT) procedures for making new hESC lines. There were no efforts to restrict hESC research generally. This research is permissible under Minnesota law and continues to be performed at the University of Minnesota.

The SCNT legislation passed by the legislature was opposed by patient advocacy

groups, the business community and both the University of Minnesota and the Mayo Clinic. Governor Dayton vetoed the legislation in a strongly worded statement. However, even if the legislation had been enacted, it would not have limited hESC research generally.

All states have a minority of their population who oppose research involving hESCs. However, we do not consider that efforts in Minnesota are any closer to success than elsewhere.

#### COMPETING FINANCIAL INTERESTS

The authors declare no competing financial interests.

*Jonathan M W Slack & Dan S Kaufman*

*Stem Cell Institute, University of Minnesota, McGuire Translational Research Facility, Minneapolis, Minnesota, USA.*

*e-mail: slack017@umn.edu*

## Comprehensive catalog of European biobanks

### To the Editor:

Biobanks are well-organized resources comprising biological samples and associated information that are accessible to scientific investigation<sup>1,2</sup>. They have become a key element for research involving human genetic or genomic and

proteomic information in conjunction with other personal or health data. There is consensus in the scientific community that progress in understanding disease will depend on the establishment, harmonization and broad use of this information<sup>3–7</sup>. The large spectrum of