

84.03B

SESSION 2008

Filière BCPST

LANGUE VIVANTE ETRANGÈRE I

Epreuve commune aux ENS de Paris, Lyon et Cachan

Durée : 2 heures

Parmi les sujets de ce fascicule, chaque candidat doit traiter le sujet correspondant à la langue qu'il a choisie comme **première** langue vivante étrangère lors de son inscription.

Toute copie, rédigée dans une langue qui ne correspondrait pas au choix de première langue vivante étrangère exprimé définitivement par le candidat dans son dossier d'inscription, sera considérée comme nulle.

L'usage du dictionnaire est interdit.

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ANGLAIS

I. VERSION (12 points)

Synthetic DNA on the Brink of Yielding New Life Forms

It has been 50 years since scientists first created DNA in a test tube, stitching ordinary chemical ingredients together to make life's most extraordinary molecule. Until recently, however, even the most sophisticated laboratories could make only small snippets of DNA - an extra gene or two to be inserted into corn plants, for example, to help the plants ward off insects or tolerate drought.

Now researchers are poised to cross a dramatic barrier: the creation of life forms driven by completely artificial DNA.

Scientists in Maryland have already built the world's first entirely handcrafted chromosome - a large looping strand of DNA made from scratch in a laboratory.

In the coming year, they hope to transplant it into a cell, where it is expected to "boot itself up" and cajole the waiting cell to do its bidding. And while the first synthetic chromosome is a plagiarized version of a natural one, others that code for life forms that have never existed before are already under construction.

The cobbling together of life from synthetic DNA, scientists and philosophers agree, will be a watershed event, blurring the line between biological and artificial.

"This raises a range of big questions about what nature is and what it could be," said Paul Rabinow, an anthropologist at the University of California. "Evolutionary processes are no longer seen as sacred or inviolable."

That unprecedented degree of control over creation raises more than philosophical questions, however. What kinds of organisms will scientists, terrorists and other creative individuals make? And who might end up owning the patent rights to the basic tools for synthesizing life?

Some experts are worried that a few maverick companies are already gaining monopoly control over the core "operating system" for artificial life. That could stifle competition, they say, and place enormous power in a few people's hands.

Adapted from Rick Weiss, *Washington Post*, December 17, 2007

II. QUESTIONS (8 points, 100 mots minimum par question)

1. "The cobbling together of life from synthetic DNA, scientists and philosophers agree, will be a watershed event, blurring the line between biological and artificial." Explain.
2. Synthetic biology: promises and risks.