

# Learning Technical English

Steven L. Hanft, M.A., Editor



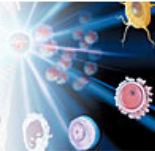
for the Medical Sector, Life Sciences & Industry - 1. Nov., 2008, Vol. 15

**Don't you want to improve your technical English skills & comprehension?** Then test your understanding by reading the text below, and use the 'Questionnaire link' to answer questions that are based on the text. We have selected certain key words or phrases, placed them into *italics*, and they will appear in the Questionnaire. Please send your answers ⇒ **LTE Newsletter Editor**.

## Stem Cell Research – A Primer

Excerpts taken from NIH, PBS Nova Program & NY Times

What  
Are  
Stem  
Cells?



Stem cells have the remarkable potential to develop into many different cell types in the body. Serving as a sort of repair system for the body, they can

theoretically divide without limit to **replenish** other cells as long as the person or animal is still alive. When a stem cell divides, each new cell has the potential to either remain a stem cell or become another type of cell with a more specialized function, such as muscle, red blood or brain cells.

### The three classes of stem cells

1. A fertilized egg is considered totipotent, meaning that its potential is total; it gives rise to all the different types of cells in the body.
2. Stem cells that can give rise to a small number of differentiated cell types are generally called multipotent.
3. Pluripotent stem cells can give rise to any type of cell in the body, except those needed to develop a fetus. They are isolated from human embryos that are a few days old. Cells from these embryos can be used to create pluripotent stem cell 'lines' — cell cultures that can be grown **indefinitely** in the laboratory. Pluripotent stem cell lines have also been developed from fetal tissue obtained from fetal tissue (older than 8 weeks of development).

Why do scientists want to use stem cell lines? Once a stem cell line is established from a cell in the body, it is essentially immortal, no matter how it was derived.

That is, the **researcher** using the line will not have to go through the rigorous procedure necessary to isolate stem cells again. Once established, a cell line can be grown in the laboratory indefinitely and cells may be frozen for storage or distribution to other researchers.



Growing Stem cells in the lab provide scientists with the opportunity **to engineer** them for use in transplantation or

treatment of diseases. For example, before scientists can use any type of tissue, organ or cell for transplantation, they must overcome attempts by a patient's **immune system** to reject the transplant. In the future, scientists may be able to modify human stem cell lines in the laboratory by using gene therapy or other techniques to overcome this immune **rejection**. Scientists might also be able to replace damaged genes or add new genes to stem cells in order to give them characteristics that can ultimately treat diseases such as Parkinson's, Alzheimer's, **spinal cord injury**, stroke, burns, heart disease, diabetes, osteo-/rheumatoid arthritis.

**Ethics** & (stem cell research) is not a specialized body of knowledge, but a conversation about questions. In that conversation, everyone has a place, where we all have moral intuitions. Thus, questions such as cell ownership or religious ones do arise, and may be addressed in a future LTE Newsletter.

### Check your understanding on the above text.

If you click on the LTE Newsletter's 'Questionnaire link', you will find questions to answer. Then please send your answers to the LTE Editor, Steven L. Hanft. We look forward to helping you to improve your technical English skills!

## Questionnaire



## Round-the-World Life Science & Technology News Updates



### Discoverers of AIDS and Cancer Viruses Win 2008 Prize in Medicine (NY Times, Oct., 8)

Awarded to three European scientists, who had discovered viruses behind two devastating illnesses, AIDS and cervical cancer. The US\$1.4 mill. award will be shared by Dr. Harald zur Hausen, 72, of Germany & French virologists Dr. Françoise Barré-Sinoussi, 61, and Dr. Luc Montagnier, 76.

### World Financial Crisis: 'The Biggest Loser could be the Sciences' (Discover, Oct., 13)

Everyone is losing this year. Whether it be the Lehman CEO, the evicted homeowner or the aging employee with a napalmed 401K...no one! Famed paleoanthropologist, Richard Leakey is already on the offensive, telling reporters during a speech the University of Arkansas at Little Rock that the economic crisis would be "just devastating" to scientific research. He fears that as the philanthropists, foundations, corporations and governments that fund scientific research watch their coffers empty, money for grants, endowments, and other research efforts will fizzle. Starting in 2009, donations for research and exploration will be "hugely hit," he predicts.



### Don't let language be a barrier to your success!

If you'd like to share this LTE Newsletter with friends & colleagues, feel free to forward this issue and invite them to subscribe for their own next issue (no fees involved!).

### CONUS Business, Advice & Training

Technical English Workshops for the Medical Sector, Life Sciences & Industry

D: Kruppstr. 18, 52072 Aachen, Tel. +49 241 81987 / Fax: +49 241 81928

NL: Spinnewiel 18, 1252 DB Laren, Tel. +31 35 5435911

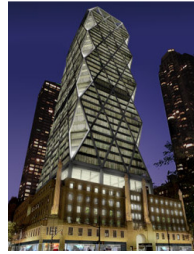
### EU R.E.A.CH. - Q&A sessions Oct. '08

The Cosmetics & Toiletries' (Allured Publications, Chicago, USA) REACH Question & Answer Round Table with Dr. Annelie Struessmann



Dr. Annelie Struessmann,  
**CONUSBAT**, Regulatory  
Advisor, REACH 'Only Rep.',  
& Author on EU REACH  
legislation

[Click ⇒ C&T.com | Reach Roundtable](#)



### The Hearst Skyscraper - 'Green' architecture comes to the Big Apple

Located at 300 57<sup>th</sup> St near 8<sup>th</sup> Ave. in Manhattan, the Hearst building has been recently opened, and is a leading architectural achievement towards conserving on energy & building materials. Daylight sensors in its window structures allow for huge cost savings and of course, help reduce greenhouse gas emissions...when in NYC, a must see!

[www.conusbat.com](http://www.conusbat.com)

copyright 2008, **CONUSBAT**