VALENCIA DEBATE (Spain) 20/09/2012
Darwin's auditorium (University of Valencia)

1) Is synthetic Biology a safe tool to deal with future challenges as the population ages?

- Synthetic biology is already a young science, it is necessary to improve much more. Maybe it will be a perfect tool in the near future.

- I think it is a good tool but we should control it very strictly and minimize the risk of it.

- The perception of the risk is different depending what kind of expert persrcibe it. Biology is made by biologists who know that life changes but synthetic biology is also made by engineers. In engineering things are made to last, that could be dangerous.

- The nuclear power plants are products of engineering and theoretically do not change. However, there are sometimes unexpected changes like in Fukushima.

- Taking away social prejudices this science is not different to any other science.

- Many biological tools are not a totally reliable (like medicines). I do not see the differences.

- Well, it is different because biological systems are normally uncontrollable because of her nature.

- I think it will be a great tool if you set up limits on it. You will always have the risk of being outside the limits, but that happens in all science (not only in synthetic biology).

- People are always scared about all kind of steps forward in the sciences, it is not unique to synthetic biology.

- Maybe we need a better press and not a manipulated one. Scientists should be disseminators, too.

- I only wanted to clarify that in news and old technologies the road is not built. We have to build it.

2) Open source / Monopolies on life

- In an ideal world open source will be the best, but we are not in the ideal world. What happened in the video really worries me.

- Nowadays there is better open source because of the actual business minds.

- We are normally using free software for computers but biology is not like computers. Maybe open source should be very different in that case.

- Monopolies become victims to pirates and hacking and the black market. Open source could help to eliminate that black market and improve the science.

- The monopoly is not good, it is necessary for many people to work together in order to improve. That happens in open source.

- In any option, it is necessary to have the right controls.

- I find a real problem in open source. Maybe normal people (not experts) will be trying to use the technology. It will be really dangerous.

- Be aware that open source could achieve really important scientific advances.

- I think the best option is not open source and it is not monopolies. I'm leaning towards a diversity of public businesses.

- We know people are irresponsible. A very good product could be used in a bad way, but a potential bad use should not stop a great idea.

3) <u>Communication with mutated bacteria</u>

- In my opinion synthetic biology has the same level of changes that natural biology has.

- No, a manipulated organism should be subject a continued quality control.

- Of course, devices made by synthetic biology need a more comprehensive control than engineered (non-living) devices.

- We all know that synthetic biology is, since an engineering point of view is different than a biological point of view. It is necessary to show all pleiotropic effects that happen when you introduce an exogenous protein. We are not able to control everything inside the cell. That it maybe the only difference between normal and modified organism.

ANALYSIS

1) Is synthetic biology a safe tool to deal with future challenges as the population ages?

Synthetic biology is a young science. In order to be developed in a correct way, it is necessary to be aware of the instability of synthetic biology systems. In addition, people need more reliable information about science in the press and media. In news and old technologies the road is not built. We have to build it.

2) Open source / Monopolies on life

In general, open source is the best option because monopolies become victims to pirates and hacking and a non-controlled black market. Likewise, in any option it is necessary to have the right controls to avoid possible risks. Everyone agreed that a potential bad use should not stop a great idea.

3) Communication with mutated bacteria

We all know that synthetic biology has an engineering point of view which is different than a pure biological point of view. It is necessary to show all pleiotropic effects that happen when you introduce an exogenous protein. We are not able to control everything inside the cell. That may be the only difference between a normal and a modified organism.

COMMENTS

Mostly all the people who came to this debate had a scientific background and this has been reflected in the way they have driven the discussion. What is curious to see is how most of the opinions came to a consensus as the debate was going on.