

DEFENDABLE FAITH - ANSWERING TOUGH QUESTIONS ABOUT CHRISTIANITY

Does God Exist? - The Evidence from Biochemistry

Romans 1:20 “For since the creation of the world, God’s invisible *attributes* are clearly seen, being understood by means of the things that are **made...**”

We look at our planet, solar system, galaxy and the universe and we see that the more we learn about each of them, the more they _____ that they did not form by chance.

Today we examine the evidence from the field of biochemistry, the area of science that has the privilege of examining the living _____ and its own universe of molecules and atoms.

I again want to acknowledge my indebtedness to Lee Strobel in his book *The Case for a Creator*. Lee interviewed Michael Behe who earned a degree in chemistry with honors from Drexel University and a Ph.D. in biochemistry at the University of Pennsylvania. After post-doctorate research at the University of Pennsylvania and the National Institutes of Health, Behe joined the faculty of Lehigh University in Bethlehem, Penn. Most of the technical information of this session comes from Dr. Behe.

Originally scientists thought the cell was _____, not because they understood it, but because our ability to magnify an image was extremely limited.

As micro imaging improved so that the insides of the cell could be discovered, they were shocked at what they found. It takes about ten _____ atoms to build a single typical cell. “One scientist described a single-cell organism as a high-tech factory, ... for it would be capable of _____ its entire structure within a matter of a few hours.”

THE COMPLEXITY AND ORDER OF A LIVING CELL _____ ANY EXPLANATION EXCEPT INTELLIGENT DESIGN.

The images we are viewing show 15 distinctive parts to the cell, but it could show much more.

- **The parts of a cell form a complex system of many other parts.**
 - The cell membrane is a complex system that has to let the right things in at the right time and keep the wrong things out.
 - The nucleus is where the DNA, the stored _____ for everything the cell needs to know, resides.
 - The endoplasmic reticulum processes proteins.

- The golgi apparatus is a way station for proteins until they are transported elsewhere.
- The lysosome is like a _____ disposal unit.
- The mitochondrion is the energy plant for the cell.
- There are many other parts also, each one necessary for the cell to live.
- **The cell is run by _____ of micro machines of the right shape and strength, and with the right interactions between them.**

Michael Behe said, "Life is actually based on molecular _____."

- "They transport cargo from one place in the cell to another;
 - they turn cellular switches on and off;
 - they act as pulleys and cables;
 - electrical machines let current flow through nerves;
 - _____ machines build other machines;
 - solar-powered machines capture the energy from light and store it in chemicals.
- **Molecular machinery lets cells move, reproduce, and process food. In fact, every part of the cell's function is controlled by complex, highly calibrated machines."**
 - Not only is each molecular machine in and of itself a testimony of design, the vast number of them greatly multiplies the evidence. And then the fact that they all work together in harmony to accomplish the purpose of the cell makes the probability of the chance assemblage of this entourage a virtual _____.
 - The living cell actually disproves the theory of evolution according to Darwin himself. In the Origin of Species, Darwin said, "If it could be demonstrated that any complex organ existed which could not possibly have been formed by numerous, successive, slight modifications, my _____ would absolutely break down."
 - The molecular machines of the cell are such organs. For if you supposed that there was an ancient precursor to even one tiny part, then you would have to also suppose that there were precursors to each other part, and that those precursors worked _____ in harmony for some good purpose in the cell just by chance. Then as one part evolved, the other evolved in a complimentary way and all by chance. The absurdity of this supposition is apparent as we look at some of the molecular machines.

EXAMPLES OF CELLULAR MOLECULAR MACHINES WHICH INCREASE THE EVIDENCE FOR INTELLIGENT DESIGN.

- **The _____ - the molecular machine that keeps us breathing. Cilia are tiny whip-like hairs on the surface of a cell.**
 - The cells lining our respiratory tract have about _____ cilia on each cell. These cilia move in synchrony to move mucus toward the throat for elimination. That is how we expel foreign particles that we inhale.
 - There are _____ basic parts, each appearing multiple times in each cilium:
 - microtubules that form the bendable shaft,
 - nexin linkers that bind the tubules together,
 - _____ protein called dynein. Through a biochemical process, the motor pushes against the tubules which bend rather than slide because they are bound together by the linkers.
 - We do not have to understand the biology or the chemistry to see the main point. The chance formation of these parts through Darwinian evolution is virtually impossible because each of these parts is _____ without the other two. They are only helpful to the cell when they appear together and structured to fit together in just the right way. Evolutionary theory cannot account for this phenomenon.
- **The Bacterial _____ - an amazingly efficient molecular motor**
 - “The flagellum’s propeller is long and whip-like....
 - This is attached to a drive shaft by a hook protein, which acts as a universal _____, allowing the propeller and drive shaft to rotate freely.
 - Several types of proteins act as bushing material to allow the drive shaft to penetrate the bacterial wall and attach to the rotary motor.”
 - The _____ of the flagellum is about 1/20,000 of an inch long. The motor that powers it is about 1/100,000 of an inch.
 - The propeller of the flagellum can spin at a rate of _____ rpm. Only the highest performance sports cars can match this rpm, and it is powered by a flow of acid through the bacterial membrane.
 - Within one _____ of a single revolution, the propeller can stop and start spinning the other direction at 10,000 rpm!

- And this motor does not run at random. It receives _____ from the bacterium so that it can propel the cell toward food or light.
- It takes more than _____ functional proteins arranged in precisely the right order to make a flagellum. The laws of probability argue strongly against any chance formation.
- **Intra cellular _____ and transportation**
 - The ribosome in the cell is a collection of around _____ large molecules containing more than 1,000,000 atoms. It is an automated factory that can make any protein that it is instructed to make by the DNA.
 - Michael Denton, author of *Evolution: A Theory in Crisis* writes “It is astonishing to think that this remarkable piece of machinery, which possesses the ultimate capacity to construct every living thing that has ever _____ on Earth, from a giant redwood to the human brain, can construct all its own components in a matter of minutes and ... is of the order of several thousand million million times smaller than the smallest piece of functional machinery ever constructed by man.”
 - Behe continues, “Not only is the ribosome amazing, but now you're faced with the challenge of getting these new components into the right rooms where they can operate. In order to do that, you need to have another complicated system...
 - First of all, you've got to have molecular _____, which are enclosed and have motors attached to them.
 - You've got to have little highways for them to travel along.
 - You've got to be able to identify which components are supposed to go into which truck. ... So there has to be a signal attached to the protein - sort of a _____ - to let the protein onto the right molecular truck.
 - The truck itself has to know where it's going. ...
 - You've got to have a way for the cargo to get _____ of the truck and into the compartment. ...
 - You've got numerous components, all of which have to be in place or _____ works.
 - The cell has this transportation system!
 - All of these parts to such a complex system could not arise by chance mutation and be preserved by natural _____ at the same time to make a functional system.

A CELLULAR SYSTEM WHICH OFFERS STRONG EVIDENCE OF INTELLIGENT DESIGN: THE BLOOD _____ CASCADE.

- “The system of blood clotting involves a highly choreographed cascade of _____ steps that use about _____ different molecular components. Without the whole system in place, it doesn't work.”
- The key to the working of the blood clotting system is the _____ of the system.
 - “If you make a clot in the wrong place - say, the brain or lung - you'll die.
 - If you make a clot twenty minutes after all the blood has drained from your body, you'll _____.
 - If the blood clot isn't confined to the cut, your entire blood system might solidify, and you'll die.
 - If you make a clot that doesn't cover the entire length of the cut, you'll die.
 - To create a perfectly balanced blood clotting system, clusters of protein components have to be inserted all at _____. That rules out a gradualistic Darwinian approach and fits the hypothesis of an intelligent designer.”

Conclusion: As Darwin said, “If it could be demonstrated that any complex organ existed which could not possibly have been formed by numerous, successive, slight modifications, my theory would absolutely _____.”

In our brief study, we have seen several “organs” that fit Darwin's established criteria for the disproving of evolution through natural selection.

At the same time, we have seen biochemical _____ whose very existence and operation testify to intelligent design.

As the Holy Spirit summed it up through David, “I will praise You, for I am fearfully and wonderfully **made**; Marvelous are Your works, And that my soul knows very well.”
Psalm 139:14 NKJV