

RNA – the first battery? or "I told you So"

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- *From:* TomHendricks474@xxxxxx
 - *Date:* Wed, 14 Sep 2005 20:23:39 -0400 (EDT)
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From: "Perplexed in Peoria"

<TomHendricks474@xxxxxx> wrote in message
[news:dg4r7r\\$19s2\\$1@xxxxxxxxxxxxxxxxxxxxxxxxxxxx](mailto:news:dg4r7r$19s2$1@xxxxxxxxxxxxxxxxxxxxxxxxxxxx)

- > Here is yet more on what I think is a key to breaking the
- > impasse on the origin. It also supports many of my ideas
- > that I've championed on SBE about life as that which adapts
- > to a sun/heat cycle.
- > Comment?
- > <http://www.biomedcentral.com/1471-2148/3/12>
- > It is hard to believe that evolution has not
- > used the opportunity to drive the primordial
- > condensation by energy of light, with nitrogenous
- > bases working as light-absorbing antenna.

[snip]

PIP:

They are not talking about a battery, really. They are talking about a photocell. And that may be even more exciting. Tom, hadn't you quoted and discussed this paper before? It's funny, but I had never noticed the sentence about the role as light-absorbing antennae leading to synthesis.

Tom

RNA – the first battery? or "I told you So"

Yes, a couple of times. But this was the first time I had read the full paper. All the other times it was articles about the paper.

PIP

The curious (and exciting) thing is that they are talking about the condensation of the base to the sugar – not the condensation of sugar and phosphate that you might expect.

In my OOL series, I suggested that nucleic acids might have originated as teichoic–acid–like fibers whose original function was structural – cell wall reinforcers. That suggestion was weak because it didn't provide a good explanation of the nitrogenous bases and base pairing. But the suggestion of the paper fills that hole in my theory. The sugar–phosphate backbone came first, as I had suggested, and the attachment of bases (and perhaps the synthesis of bases) was driven by light energy. The only problem is that there is no 'precedent' in modern biochemistry for the transfer of condensation energy from the sugar–base bond to anything else. That is, if the process was once common, it has left no fossils.

Tom

It's still closer to both our ideas. I think it is going in the right direction for more discoveries. I do have an email of one of the researchers, if you would like to share your ideas directly with him. Let me know.

PIP

Well, Tom, you are welcome to say "I told you so" regarding the portions of the paper that explicitly support you – such as their suggestion of semi–dry land for the site of the origin, or their talk about selection for surviving uv. But I will say "Thank you

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for calling this to my attention" regarding the part about the

antenna and sugar–base condensations.

Tom

Yeah, let's see where it takes us.

PIP

Of course, the whole paper is simply an in–silico simulation and

must be taken with several grains of salt. But it will be

interesting to see whether any of their ideas can be replicated by

chemists working with real molecules.

Tom

Yes that's the rub. And it seems that doing the real testing is not all that easy to do.

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- Prev by Date: [**Re: Most important paper in evolutionary biology**](#)
 - Next by Date: [**Re: Unequal branch lengths**](#)
 - Previous by thread: [**Re: RNA – the first battery? or "I told you So"**](#)
 - Next by thread: [**Phanerozoic Eon ends?**](#)
 - Index(es):
 - ◆ [**Date**](#)
 - ◆ [**Thread**](#)