

NASA's arsenic-eating life form gets a second look

December 15 2010, by Kerry Sheridan



A 2007 photo shows a bird at a Lake in Lee Vining, California. Earlier this month, NASA-funded researchers announced they had found a new life form that thrives on arsenic and lives in the depths of a California lake. Soon after the announcement, critics took to the blogosphere with skeptical views and downright insults.

Soon after NASA-funded researchers [announced this month](#) they had found a new life form that thrives on arsenic, [critics took to the blogosphere](#) with skeptical views and downright insults.

"I don't know whether the authors are just bad scientists or whether they're unscrupulously pushing NASA's 'There's life in outer space!' agenda," wrote Canadian microbiologist Rosie Redfield in a blog that ignited the web furor.

The criticism spread with lightning speed, sparking a wide debate over what exactly is in the alleged arsenic-eater's DNA, but also what role bloggers should play in a field long dominated by peer-reviewed journals.

And resolution may be months or years away, as scientists wait to obtain samples of the same bacteria to try and replicate the findings led by Felisa Wolfe-Simon and published December 2 in the prestigious journal Science.

The journal's editors have "received about 20 technical comments and letters responding to the article," the magazine said in a statement sent to AFP on Tuesday.

"Responses will undergo review, and Wolfe-Simon's team will then be asked to formally address their peers' questions in a future edition of Science," it said.

"It is hoped that the paper-responses and the authors' replies can be published in January 2011."

Wolfe-Simon and [NASA](#) have declined to respond directly to media queries asking for a response to the critics, but she did post a statement on her website saying she and colleagues "welcome lively debate."

"My research team and I are aware that our peer-reviewed Science article has generated some technical questions and challenges from within the scientific community," she wrote.

"Our manuscript was thoroughly reviewed and accepted for publication by Science; we presented our data and results and drew our conclusions based on what we showed. But we welcome lively debate since we recognize that scholarly discourse moves science forward."

She added that she and her colleagues were working on a list of "frequently asked questions" to help promote general understanding of our work."

Asked for further comment on Tuesday, study co-author Paul Davies at the University of Arizona told AFP he'd prefer to wait until the FAQs list is finished.

"It would make sense to hold off until we have a comprehensive picture," Davies said.

After Redfield's blog was swamped with visitors, another blogger also pointed to potential errors, including that the DNA that researchers said was built with [arsenic](#) actually contained phosphate.

"There's been a lot of hype around the news of GFAJ-1, the microbe claimed to substitute arsenate for phosphate in its DNA," wrote scientist Alex Bradley on blog We Beasties, which is maintained by graduate students studying microbes at Harvard University.

"In particular, one subtle but critical piece of evidence has been overlooked, and it demonstrates that the DNA in question actually has a phosphate -- not an arsenate -- backbone."

Since then, various US media sites, including Wired, Slate, ABC News and the Columbia Journalism Review's blog, The Observatory, have all carried versions of the story.

"The controversy surrounding this organism is quite fascinating," Peter Gilligan, a professor of Microbiology-Immunology at the University of North Carolina told AFP in an email.

"First, the work was published in one of the most prestigious peer

reviewed journals, Science. A sharp rebuttal that was peer reviewed by no one appears in a blog written Rosie Redfield," he wrote.

"What I find fascinating as a journal editor and senior scientist is how information can be disseminated so quickly globally and how at least in some quarters it seems, that peer reviewed information and blogging can be given equal weight," he added.

"It remains to be seen who will be proven to be correct."

Gilligan said that in his view, Wolfe-Simon "maintained the high ground in this controversy by offering the organisms she has studied to other investigators via the typical channels."

Blogger Heather Olin, who writes for We Beasties, told AFP she did not "know of anyone currently working on replicating the Wolfe-Simon findings," though she was aware that "many people have requested the strain of bacteria from Wolfe-Simon so that they can begin to do that type of work."

"However, these things tend to move slowly, and it is hard to know when that will happen," she said.

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