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HUMANS cannot possibly be related to any intelligent life elsewhere in the universe, a new scientific study has found.

There is a theory that life on Earth began when a comet carrying frozen micro-organisms crashed on this planet.

But researchers in the US found cosmic radiation had killed off the DNA of microbes - retrieved from Antarctic glaciers - that were older than 1.1 million years. This would mean comets would effectively be sterilised as they travelled across the vastness of outer space and that any life in solar systems across the universe must have originated independently.

The scientists found microbes younger than 1.1 million years were able to come back to life, but this period is too short to make the journey from one solar system to another.

Professor Paul Falkowski, of Rutgers University in New Jersey, who took part in the research, said: "The two fundamental questions in science are: where did we come from, and are we alone? Almost certainly, any life in our solar system evolved uniquely in this solar system."

The research team collected five samples of ice ranging from 100,000 to eight million years old to test how long cells remained viable. The younger microbes "grew really fast", but the older material grew much more slowly and researchers were unable to identify them as their DNA had deteriorated.

While there was DNA present in the older organisms, it had been too badly damaged to reproduce effectively or to have an impact on life.

In a paper published yesterday by the American online journal Proceedings of the National Academy of Sciences, the researchers concluded that life on Earth, however it arose, did not ride in on a comet or other debris from outside the solar system. "It's the cosmic radiation that's blasting the DNA into pieces over geologic time, and most of the organisms can't repair that damage," the paper said.

"The preservation of microbes and their genes in icy comets may have allowed

transfer of genetic material among planets. However, given the extremely high cosmic radiation flux in space, our results suggest it is highly unlikely life on Earth could have been seeded by genetic material external to this solar system."

Prof Falkowski said it was likely that any extra-terrestrial life was based on the same basic constituents - hydrogen, carbon, oxygen, nitrogen, sulphur and phosphorus plus electricity - but added: "There's no way you can imagine that comets wouldn't be sterilised by cosmic radiation."

Professor Aubrey Manning, an Edinburgh University zoologist, said the origin of life and the role of comets was an age-old debate. "The argument about whether life originated here or whether we got 'seeded' from outside has been going on for 150 years or so," he said."

He was "pretty sure there must be intelligent beings elsewhere" and thought it likely they would be made of the same sort of materials found on Earth. He said: "Science fiction writers have been along this path many times and most of them are pretty unimaginative. Most aliens tend to have two eyes and so on.

Can we imagine a life form which is not based on carbon, hydrogen, oxygen and nitrogen?

"I don't think anybody has come up with a plausible suggestion, but that may be a limitation of our imagination."