Curiosity discovers key indicator of life

December 17, 2014: NASA has detected variations in methane gas levels within the Martian environment, suggesting it's an active one, and may support life.

James Ward

Mars rocks contain a key chemical indicator necessary for life to exist, NASA scientists say.

Scientists have been testing the data for almost two years in an effort to make sure the sample,

which was collected in 2013 months after the Curiosity rover first arrived on the red planet, was not contaminated.

"This first confirmation of organic carbon in a rock on Mars holds much promise," Curiosity team member and MIT scientist Roger Summons said.

"Organics are important because they can tell us about the chemical pathways by which they were formed and preserved."

The rover found the compound twenty months ago when drilling into a rock codenamed “Cumberland”.

The probe detected a sharp increase in methane that scientists say is Martian in origin and the first definitive evidence of organic material on the surface of the red planet.

Methane is a greenhouse gas made up of both carbon and hydrogen atoms.

It is considered to be a key indicator for the presence of or potential for life due to the fact it is primarily produced by living processes.

At least 90 percent of the methane in Earth's atmosphere originates from biological sources such as cows.

But the discovery is not definitive with the gas also produced by other processes including the degradation of stellar particles by ultraviolet light, or the interaction of water with surrounding rock.

The Mars spike was a tenfold increase when compared with previous readings of the atmosphere surrounding the rover.

"This temporary increase in methane, sharply up and then back down, tells us there must be some relatively localized source," said Sushil Atreya of the Curiosity rover science team.

The results of the sample study were discussed at a media briefing on Tuesday night.

Sources: *NASA Space.com*