

The Sugar Trehalose - Going to Mars and Back

Smart Sugars Lesson # 43

by JC Spencer

The Russian Federal Space Agency launched the Grunt probe to Mars in November 2011, to return in 2014. The basketball size capsule contained the tiny water bear animals.

The water bear cosmonauts had round trip tickets on this interplanetary space flight. The mission to Mars and its tiny moon Phobos is the first ever venture to obtain soil samples and bring them back to earth from that region of the galaxy .



If any animal is able to survive the environment to Mars and back, it is the water bear. The water bears are scientifically known as Tardigrades. They are invertebrates about 1.5 millimeter when fully grown with clawed legs. You view them with a microscope.

Previously, I have written about the secret weapon that gives the water bears their supernatural abilities. They are qualified to go to Mars, return to earth, and still reproduce.

The little water bear has been exposed to more stress than any other animal that we know about which could endure and survive. But, the water bears do not seem to mind. They have been dipped into liquid nitrogen near absolute zero, baked at 150°C (302°F), placed in 6,000 times atmospheric pressure, plunged into mineral acid, boiled in alcohol, mixed with noxious chemicals, and the European Space Agency launched them into lethal radiation (100 times what other life could endure.), freezing temperatures, and the harsh vacuum of outer space.

Sometimes the water bears withdraw but when they were brought back, they not only live and thrive, they reproduce, powered by Trehalose.



The actual biological secrets of the water bear remain a mystery. We have learned that Trehalose sugar plays a major role in the water bear's ability to endure extreme stress. Research indicates Trehalose strengthens the cell membrane and enhances hydration and dehydration without as much damage.

The ultimate test for the water bear is frozen dehydration so it appears they are but dry dust particles. Scientists report that when they are thawed and re-hydrated, they come back to life and are even able to have offspring.

Mission Failed, Our Water Bears friends are lost in Earth's outer orbit. Efforts to resume contact with the Russian space mission to Mars stuck in Earth orbit after launch have failed and the probe is considered lost, Interfax news agency reported Saturday November 12, 2011.

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