The chemical production of sponges leads the way to the pharmaceuticals industry

The sponge doesn't have organs as other animals in nature have, such as a heart or a brain. They also don't have a nervous system, yet their defensive mechanisms are so impressive, that scientists are using sponges to produce new drugs. These animals, with no wisdom or independent power, are actually able to produce medicines in their own bodies while scientists must work hard to develop medicines in laboratories, using their years of work and study. The sponges, refuting the theory of evolution, are amongst the manifestation of the amazing creation of All-mighty Allah.

The sponge is an animal type that lives in the seas. Their length varies between a couple of centimeters and 2 meters. While most of this species lives in the seas, certain sponges live in fresh waters. It is possible to see a new type of sponge in almost every depth of the sea.

The evolutionists, although gravely mistaken, thought that these organisms were 'the most primitive multiple-cellular living thing', owing to their lack of brains (the sponges, that is). However, research has shown that sponges are not primitive as claimed by evolutionists, but on the contrary, are equipped with amazing chemical abilities, a manifestation of Allah's amazing creation.

Interesting sponges

The skeleton of the sponge is composed of a mixture of a protein called spongin and spicules. Owing to its porous structure, sponges absorb water and then eject it out through tiny evacuation holes.

Since sponges typically live in cool and salty waters, and since they are stationary organisms, they filter the food that approaches them by using a natural hydraulic system. They usually feed on very tiny organic substances, diatoms, single-celled microscopic plants, dead or living plankton or bacteria.

Another very interesting thing about sponges is that they can grow into a full sponge from a small piece of sponge. For example, if a huge chunk of the sponge is torn off due to strong waves, the small remaining part can grow into a full, new sponge. Additionally, the torn-off part can stick to another place on the seabed or undersea structure, and renew itself again.

Sponges are amongst the oldest living things, with fossils dating back to more than 500 million years ago. Some scientists consider sponges to be animals, and other scientists consider sponges to be specific cell groups. This confusion arises because

sponges don’t have hearts, livers, brains or other organs. Despite the simplicity of their anatomies, the sponges are miracles of creation that posses complex skeletal systems.

Filtering of the Sponges

A sponge consists of various kinds of cells, distributed in the inside and outside of their bodies. They are different from other animals with the small chambers in their bodies, covered with collar cells. In the center of these cells, there are small microvillis that bring water, oxygen and food to the body, using small movements.

These collar cells help the sponge feed, swallow bacteria, small algae, and organic wastes, and then pass them to cells called the vesicles. The vesicles in turn, pass the now digested food to other cells. Also all the cells in the body of the sponge exchange oxygen and carbon dioxide.

The sponge is a very elaborate creation; for example, a sponge that is ten centimeters long and two centimeters wide has more than two million collar cells. It can pump 110 liters of water per day through these canals. So we can easily call a sponge a very efficient filter.

Sponges, with no wisdom and with no brains, display a technology that is far superior to a filter produced in a factory using the latest technology. The amazing and very complex structure of the sponge is one of the examples of our All-Mighty Lord’s amazing creation, showing us the unique art of Allah in living things. This fact is stated as follows in Quran:

> **And in your creation and all the creatures He has spread about there are signs for people with certainty. (Surat al-Jathiyya, 4)**

From sponges to pharmaceuticals …

Some sponge types produce poisonous chemical compounds in order to defend themselves. These poisonous chemicals of the sponge not only protect them from their natural predators, but also act as an effective protection against the aggressive shelled animals.

Sponges have been used for thousands of years in science and in our daily lives. The pharmaceutical industry in particular benefits from sponges. The poisons, produced by sponges to protect themselves, affect the various systems in the human body in different ways, and when used correctly, these poisons act as drugs and help cure diseases.

According to the scientists who discovered that sponges are rich in their poisonous compounds, these organisms, instead of trying to protect themselves with a shell or a needle or by running away, defend themselves chemically. When we say the sponge is defending itself, we are not talking about an educated scientist that works in laboratories, but a sponge with no wisdom and consciousness. It is of course impossible for such an organism to devise ways to protect itself using chemical means and produce them; sponges act by the inspiration of All-Mighty Allah, like all other living things.

How does the pharmaceuticals industry use sponges?

The scientists realized that the sponge, which feeds on bacteria, have a very strong immune system working against the bacteria in the water they filter, and they found ways to use this antibiotic effect for the good of humanity.

Clinical studies demonstrated that a molecule called AS-2 in a sponge type prevented the cell division in cancer. Other research has revealed similar results; for example scientists saw that a compound obtained from the Pacific Sponge (Dysidea frondosa) can be used to lower fever, and the chemical compounds produced by Phahertis simplex can reduce the negative reactions of the body after organ transplantation.

Also, the chemical compounds obtained from the sponge are used in the production of medications for arterial problems, stomach and intestinal disorders and in inhibiting tumor formation.

In studies conducted with sponges, scientists have discovered that substances with immunosuppressive, anti-inflammatory, anti-carcinogenic, antibiotic and analgesic effects were present in sponges, and they also announced that they are in the last stages of the production of a new medication that will be used for cancer treatment.

Sponges for cancer treatment

As a result of these studies, promising findings were obtained suggesting that sponges and bacteria in the seas can be used for the production of new drugs against joint inflammations and cancer. William Fenical, of the California Scripss Institute said that *'...the living organisms in the oceans have been using chemical defense methods to protect themselves from diseases, for millions of years'*. He also added the pharmaceuticals industry has been making antibiotics, pain killers and cancer medication using terrestrial plants, but now they are close to losing this source owing to deforestation, desertification, and other environmental issues.

According to the announcement made by the Florida Ocean Studies Institute, the chemical defense system a sponge uses to swiftly kill a parasite that enters in it will be used to destroy the cancerous cells in the human body. (Associated Press June 21, 1998)

The discovery of cancer-healing substances in the chemicals produced by sea sponges made the pharmaceutical companies turn to these animals. Scientists from the Australia Institute of Marine Studies (AIMS) and a pharmaceuticals company have agreed to co-develop a drug made of these organic substances produced by sponges, and if successful, this drug will be used against cancer.

The scientists from the Australia Institute of Marine Studies said that the substances obtained from sponges could kill one or two types of cancer cells, without damaging healthy cells. Lyndon Llewellyn from AIMS said that these were organisms showed potential in fighting breast cancer or leukemia, *"The chemical substances in these organisms kill the cells. Some are still in the pre-clinical stage.*

(aims.gov.au/news/pages/news-items-jandec03.html)

Conclusion:

Surely no one can claim that a brainless sponge has developed the knowledge that leads the way to the pharmaceuticals industry. Needless to say, this creature was created by All-Mighty Allah, with all its details and is now made to serve humanity. Our All-Mighty Lord, Who creates all living things with their amazing qualities,

explains this in Qur’an as follows:

And He has made everything in the heavens and everything on the earth subservient to you.It is all from Him. There are certainly signs in that for people who reflect. (Surat al-Jathiyya, 13)

https://www.harunyahya.info/en/articles/the-chemical-production-of-sponges-leads-the-way-to-the-pharmaceuticals-industry