

IMBB researchers uncover a novel mechanism, important for learning and memory

Research at the Institute of Molecular Biology and Biotechnology, published in the international scientific periodical EMBO Journal, reveals an important molecular mechanism that facilitates learning and the formation of memories by the nervous system.

By using the simple nematode worm *Caenorhabditis elegans*, IMBB researchers Giannis Voglis and Nektarios Tavernarakis, have discovered a new role for a specific class of proteins in mediating learning and memory.

Although learning and memory are fundamental brain functions they remain poorly understood. What molecular mechanisms underlie the capacity of the

nervous system to store information and modify future behaviour? How are these mechanisms regulated? With their study, IMBB researchers demonstrate that specific ion channel proteins modulate communication between groups of neurons that control the behaviour of *Caenorhabditis elegans* animals.

An important component of learned behaviour is the ability to forecast positive or negative outcomes based on specific sensory cues. This predictive capacity is typically manifested by appropriate behavioural patterning. However, the molecular mechanisms underlying such behavioural plasticity are poorly

understood. *Caenorhabditis elegans* displays experience-dependent behavioural responses by associating distinct environmental signals. Voglis and Tavernarakis have found that a specific ion channel protein called ASIC-1 is required for associative learning in *Caenorhabditis elegans*. This channel localizes at specific neurons which communicate by releasing the neurotransmitter dopamine. ASIC-1 functions in these neurons to amplify normal dopaminergic signalling, necessary for associative learning. In humans, dopaminergic neurons have been implicated in drug addiction. Also, these neurons degenerate in patients with Parkinson's disease.



TAG Heuer

Leonardo DiCaprio and TAG Heuer join forces to support Environmental Charities

"Time means possibility. What we choose to do with that time is up to us, but hopefully, we'll make the right choices, responsible choices that help lead to a better future for the next generation." — Leonardo DiCaprio

TAG Heuer introduced actor and environmental activist Leonardo DiCaprio as its newest ambassador. The three-year agreement is a unique one for TAG Heuer and DiCaprio, with the royalties generated from the deal as well as a multi-million-dollar commitment from Mr DiCaprio going to support major environmental initiatives.

"TAG Heuer is a strong brand with a proven commitment to doing good," said DiCaprio. "It is a great day when a company as respected as TAG Heuer explores a different way to do business—selling products and giving back at the same time. I'm very excited to start this new partnership, and look forward to a long relationship with TAG Heuer."

DiCaprio's willingness to push limits has made him one of the most exciting actors in Hollywood. It is that very same quality that fuels his passion for the environment. A deeply engaged activist, DiCaprio has a long history of environmental philanthropy. He speaks regularly on ecological issues and is a prominent board member of the Natural Resources Defense Council. He co-wrote, co-produced and narrated *The 11th Hour*, a well-received 2007 documentary on the world's eco-system. DiCaprio's commitment to sustainability and children in need will be the cornerstones of his partnership with TAG Heuer over the next three years. "TAG and I will be making donations to some of the most influential and effective



TAG Heuer is proud to present its newest ambassador: Leonardo DiCaprio.

environmental organisations around," says DiCaprio. "Each and every day, these organisations are doing important work to ensure our planet's resources future generations. Hopefully, our donations will help expand their reach and raise their profile."

"Leonardo DiCaprio is far more than an actor. He is a man who wants to change the planet and improve the plight of children in need. He is contributing his skills and wealth to a better, smarter world." — Jean-Christophe Babin, CEO and president, Tag Heuer.

A three-time Oscar nominee, winner of the Golden Globe for Best Actor for *The Aviator*, winner of the Silver Berlin Bear award for Best Actor for *Romeo + Juliet*, and 2009 Golden Globe nominee for Best Actor for his latest film *Revolutionary Road*, Leonardo DiCaprio has won more acclaim than most actors of his generation. He achieved mythic box-office status as Jack Dawson in *Titanic*, history's highest-grossing film ever. On the strength

of this one film alone, DiCaprio could have cruised from one mainstream blockbuster to the next.

He didn't.

Which is what makes DiCaprio the consummate TAG Heuer ambassador. Like TAG Heuer, DiCaprio is driven. Like TAG Heuer, DiCaprio takes risks. Like the brand, DiCaprio has the ingenuity to take a winning formula and change it for the better.

TAG Heuer is proud to announce Leonardo DiCaprio as its ambassador because they share the same relentless drive to push innovation and exceed expectations, especially their own. TAG Heuer surpasses itself and its competitors with each new timekeeping device; Leonardo DiCaprio proves himself a more skilful and inventive actor with each new film he makes, and a more dedicated activist with each new environmental endeavour. It is in this spirit that TAG Heuer is proud to join forces with its newest ambassador, Leonardo DiCaprio.

Bush awards John Howard Freedom medal

Former prime minister John Howard has been presented with the United States' highest civilian award in a ceremony in the US capitol. Howard, Colombian President Alvaro Uribe and former British prime minister Tony Blair were each given the Presidential Medal of Freedom by US President George W Bush as three foreign leaders who have been among his most loyal partners on the world stage. The awards come just one week before Bush leaves office.

The president himself clasped the medals around each man's neck after a military aide read citations in the leaders' honour.

Vicks bad for youngsters, study finds

THE popular remedy for snotty kids, Vicks Vaporub, could be bad for young children. Research published by the American College of Chest Physicians has found Vicks may clog a young child's airways by increasing mucus production and slowing its removal. "I recommend never putting Vicks in, or under, the nose of anybody - adult or child," the lead author, Dr Bruce Rubin from the department of pediatrics at Wake Forest University, North Carolina, said.

He said cough and cold medicines and decongestants were not good for young children. He recommends salt water, warm drinks and chicken soup.

Proctor & Gamble, the maker of Vicks, slammed the study, saying it contradicts previous studies and is based on limited data from tests on ferrets, of unknown relevance to humans. "In the past five years alone in Australia and New Zealand we have had zero respiratory adverse events reported," a spokeswoman for the company said.