Science & Technology: New Way to Treat Brain Cancer

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FACTBOX: Receptors, drug target and preparation

Age: Medical research usually begins in a laboratory dish or mouse model. Several different scientific frameworks are used to design various experiments and manipulate the brain cells. Researchers from the Heidelberg Institute for Medical Research (HIMR) succeeded in studying one of the therapeutic targets for cancer prevention through the experimental use of a novel modified receptor at the â€œXâ€-shaped lipid-like porphyrin binding site. A â€œsubpopulationâ€ of recombinant single-stranded RNA (SKSRNAs) has been engineered at this site. In healthy and diseased tissue, microRNA-768-3p (rRNA), a repetitive messenger gene, is produced from some of the 200,000 genes that reside at this subpopulation. When microRNA-768-3p is switched on or is deleted, it makes RNA and deletes RNAs, thus targeting the fate of the mammalian cell. For any cell, the expression of rRNA is essential in order to maintain its chromosomeâ€™s proper operations.

HRH The Duke of Cambridge met with colleagues

Leicester University Medical School research group

HIMR scientists Drs. Graebner and Schaefer led this study together with the research group of Dr. Diana Hersey of the Medical University of Vienna. An international collaboration was led by Dr. Ilse Guenzler, in cooperation with colleagues from the Pfizer Diagnostics Research Institute, Heidelberg.

In vivo, microRNA-768-3p causes the apical fibronectin protein to degenerate and accumulate. This transforms the mouse neurons from a regular cycling of oxygen-with-metabolite metabolism to high-demand purification of oxidant losses (such as neurotransmitters) and molecular waste (like cancer cells). In vivo experiments observed that the ALN-TTR2 therapeutic toxin modulated the secretion of immune system messenger RNA (mRNA). â€œOur data show that a high-dose ALN-TTR2 therapy is partially responsible for regenerating the fibronectin functional state in brain cancer tumors,â€ says Dr. Werner Biesenbach, one of the lead researchers of the research group.

Predictive method for rRNA modification

However, this residual DNA damage leads to increased transcription of mRNA in the brain cancer patients compared to non-delivered therapeutic molecules. Functional cell imaging studies also revealed that transcription of mRNA to the mitochondrial miRNA encoded by rRNA is enhanced in a significant proportion of brain cancer patients. â€œThe high-resolution images taken by deep imaging equipment showed a clear increase in the concentration of RNA. This resulted in the secretion of iron-containing substances that act like a trigger,â€ states Biesenbach. â€œIt may be that these â€˜dendritic triggersâ€™ help to control the regrowth of damaged cells.â€

HCM researchers Drs. Zhang, Jiang, L Jin, L Hersey, Xuefen, Tang, and X Guo co-authored this study. The authors of the principal article receive a grant from the Royal Society. Additional authors are associated with the Liezfrankenberg Research Center at University Medical Center South Germany, CZPP, and the Liezfrankenberg Institute for Cell and Gene Testing, CZPP. Their contributions were approved by the post-doctoral fellow Mirta Kaffana of the Liezfrankenberg Institute.

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Drs. Graebner, Schaefer, and Schaefer

Source: Heidelberg Institute for Medical Research

A Red Fire Hydrant Sitting In The Middle Of A Forest