Scientists Come Closer to Cure for Common Cold

During a recent meeting of the American Society of Microbiology held in San Diego, researchers from several companies reported that they may have found a drug that may be able to cure the common cold and others that can ease the symptoms of flu and stop the flu virus from infecting people. The flu kills between 10,000 to 40,000 people in America each year. The flu virus has a high rate of mutation, contributing to the difficulty in finding a cure. Current vaccines work fairly well, with a failure rate of 30%.

Glaxo Wellcome’s drug, Relenza (generic name: Zanamivir), has been shown to reduce a flu attack by one day and may be a potential vaccine against the flu virus. The drug is available in powder form and is inhaled using a pocket-sized puffier device. In tests conducted on college students, 2% (or 11 students) who used Relenza caught the flu virus sweeping through their school compared to 6% (34 students) who did not take the drug. This indicated that the drug could reduce flu risk by about 67%. In another study, Zanamivir was administered intravenously to seven volunteers at the University of Virginia. The results showed that six of the volunteers did not get infected by the flu virus. Another drug known as GS4101 was capable of reducing flu attack by one third and effectively relieved flu symptoms. This drug was developed jointly by F Hoffman-La Roche Ltd. and Gilead Sciences Inc., a Californian biotechnology company. In tests conducted on college students, 2% (or 11 students) who used Relenza caught the flu virus sweeping through their school compared to 6% (34 students) who did not take the drug. This indicated that the drug could reduce flu risk by about 67%. In another study, Zanamivir was administered intravenously to seven volunteers at the University of Virginia. The results showed that six of the volunteers did not get infected by the flu virus. Another drug known as GS4101 was capable of reducing flu attack by one third and effectively relieved flu symptoms. This drug was developed jointly by F Hoffman-La Roche Ltd. and Gilead Sciences Inc., a Californian biotechnology company.

Researchers from several companies reported that they may have found a drug that may be able to cure the common cold and others that can ease the symptoms of flu and stop the flu virus from infecting people. The flu kills between 10,000 to 40,000 people in America each year. The flu virus has a high rate of mutation, contributing to the difficulty in finding a cure. Current vaccines work fairly well, with a failure rate of 30%.

Glaxo Wellcome’s drug, Relenza (generic name: Zanamivir), has been shown to reduce a flu attack by one day and may be a potential vaccine against the flu virus. The drug is available in powder form and is inhaled using a pocket-sized puffier device. In tests conducted on college students, 2% (or 11 students) who used Relenza caught the flu virus sweeping through their school compared to 6% (34 students) who did not take the drug. This indicated that the drug could reduce flu risk by about 67%. In another study, Zanamivir was administered intravenously to seven volunteers at the University of Virginia. The results showed that six of the volunteers did not get infected by the flu virus. Another drug known as GS4101 was capable of reducing flu attack by one third and effectively relieved flu symptoms. This drug was developed jointly by F Hoffman-La Roche Ltd. and Gilead Sciences Inc., a Californian biotechnology company. In tests conducted on college students, 2% (or 11 students) who used Relenza caught the flu virus sweeping through their school compared to 6% (34 students) who did not take the drug. This indicated that the drug could reduce flu risk by about 67%. In another study, Zanamivir was administered intravenously to seven volunteers at the University of Virginia. The results showed that six of the volunteers did not get infected by the flu virus. Another drug known as GS4101 was capable of reducing flu attack by one third and effectively relieved flu symptoms. This drug was developed jointly by F Hoffman-La Roche Ltd. and Gilead Sciences Inc., a Californian biotechnology company.

In their study, the researchers conducted assays using immunofluorescent-labeled flow sorter, Ca$^{2+}$ labeling inside cells, RT–PCR, and ELISA to test the amount of antibodies in the supernatant of cultured immunized mice spleen cells. The team also studied the effects of neuropeptides on in vitro immune functions (e.g., T and B cells, natural killer cells, and macrophages). They found that the opioid peptide is able to increase the expression of surface antigens of CD4 T complement cells but does not affect the expression of CD8 T cell antigens. In studies on the links of neuropeptides and I-type allergy, researchers found that the neuropeptides initiated mouse macrophages to release histamine. Physiological aging may affect the opioid peptide’s ability to enhance the multiplication response induced by PHA of mouse T lymphocytes. Aging will also reduce the ability of the opioid peptide to enhance the expression of the mRNA of cytokines — such as IL-2, IFN-γ — in monocytes. Studies describing the regulation of immune functions by the effects of neuropeptides produced by neurons on immune cells have been considered to be of great importance to medical specialists.

Neuropeptides as Regulators of Immune Functions

In 1989, a team of researchers from the Laboratory of Immunology at the Institute of Fundamental Research, Chinese Academy of Medical Sciences (CAMS), began a study on how the immune system is regulated by the nervous system. The group — headed by Professor Lin Jiayou (林嘉友) — also investigated the structural and functional relationship between the two systems. The study was supported by CAMS and the State Natural Science Foundation.

According to classical research, the nervous system and the immune system become isolated from each other during early embryonic development. However, advancements in the study of immunology and neurology have revealed that both systems have bidirectional regulation functions. These two systems, together with the endocrine system, play an important role in regulating physiological and pathological processes, and help to maintain the internal environment of an organism at a steady state.

In their study, the researchers conducted assays using immunofluorescent-labeled flow sorter, Ca$^{2+}$ labeling inside cells, RT–PCR, and ELISA to test the amount of antibodies in the supernatant of cultured immunized mice spleen cells. The team also studied the effects of neuropeptides on in vitro immune functions (e.g. T and B cells, natural killer cells, and macrophages). They found that the opioid peptide is able to increase the expression of surface antigens of CD4 T complement cells but does not affect the expression of CD8 T cell antigens. In studies on the links of neuropeptides and I-type allergy, researchers found that the neuropeptides initiated mouse macrophages to release histamine. Physiological aging may affect the opioid peptide’s ability to enhance the multiplication response induced by PHA of mouse T lymphocytes. Aging will also reduce the ability of the opioid peptide to enhance the expression of the mRNA of cytokines — such as IL-2, IFN-γ — in monocytes. Studies describing the regulation of immune functions by the effects of neuropeptides produced by neurons on immune cells have been considered to be of great importance to medical specialists.