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## Researchers in Taiwan Successfully Develop INER In-111-Pentetreotide Injection Drug—Good News for Neuroendocrine Tumor Patients

A research team at the Radiopharmaceutical Manufacturing Center of the AEC's Institute of Nuclear Energy Research (INER), after many years of hard work directed at meeting the critical needs of neuroendocrine tumor patients in Taiwan, has finally developed a high quality medical grade indium chloride (In-111) solution. Moreover, utilizing this indium chloride (In-111) solution, along with the lyophilized Pentreotide kit developed by INER for labeling, the team has produced INER In-111-Pentetreotide Injection. On June 21, 2005, this drug was awarded the country's first manufacturing license (DOH License No. R000024) for a peptide radiopharmaceutical. The legitimate availability of this drug on the market is truly an event of benchmark significance.

INER In-111-Pentetreotide Injection has been proved to be a high sensitivity and specificity diagnostic radiopharmaceutical. There are large numbers of somatostatin receptors on the surface of neuroendocrine tumors, and In-111- Pentetreotide can be used to perform specific and sensitive nuclear scintigraphy of primary and metastatic neuroendocrine tumors. At time of clinical application, In-111- Pentetreotide is prepared by labeling a medical grade indium chloride (In-111) to a lyophilized kit, which comprises octreotide conjugated with a chelating agent-DTPA and a special excipient formulation. Octreotide is more stable than its analogue, somatostatin, in bloodstream.

According to 2003 cancer death statistics published by the Department of Health, nearly 10,000 people die every year from lung cancer and colorectal cancer, and 15-20% of lung cancer and colorectal cancer patients fall under the category of neuroendocrine tumors. The prognosis for neuroendocrine tumors is typically poor, as these tumors can metastasize from their original site (including bone marrow) early on. Therefore, if In-111-Pentetreotide is used at an early stage to detect the upregulation of somatostatin receptors on a patient's tumor, followed by octreotide chemotherapy, the patient's survival rate can be greatly improved.

INER In-111-Pentetreotide Injection is currently in production at INER, the only radiopharmaceutical plant in Taiwan under the DOH cGMP audit. Furthermore, tests have been carried out proving exact chemical equivalence with Octreoscan, the original brand, ensuring that the INER drug complies with international standards for drug manufacturing quality and efficacy. In the future, the highly sensitive and specific neuroendocrine tumor diagnostic drug INER In-111-Pentetreotide will be provided to patients in need at a reasonable price and in an efficacious form.