Simpler, less-expensive detection kit for osteoarthritis, liver disease, and cancer developed

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A research team from Chiang Mai University (CMU) have developed a simpler, less-expensive Detection Kit for monitoring Hyaluronan using purified protein from the waste cartilage of a variety of species from the meat processing industry. The research won the team the National Research Council Invention Award, 2011.

Assoc. Prof. Dr. Pratya Kongtaweelert of the Department of Biochemistry, Faculty of Medicine, Chiang Mai University, has managed a research unit of excellence in tissue engineering and stem cells for 20 years. Recently, Dr. Pratya and his research team purified protein from the waste cartilage of a variety of species from the meat processing industry for use in developing a simpler, less-expensive Detection Kit for monitoring hyaluronan (or hyaluronic acid or HA). This kit can help with screening, diagnosing, and monitoring the treatment of arthritis, osteoarthritis, cancer, and other diseases, particularly cirrhosis of the liver.

Dr. Pratya said, "In fact, Thailand has a lot of liver disease, ranked among the top in the world." After pursuing a doctoral study on hyaluronan in Australia, he returned to Thailand where he continued to conduct research in this field under support from the National Office of Science and Technology Development Agency (NSTDA) and others.

Dr. Pratya's recent research, "Basic research, development, and

application of high-protein binding drugs Hyaluronan for diagnosis of osteoarthritis, liver disease and cancer," was awarded the National Research Council's Invention Award in Medical Sciences for 2011. The research isolated protein from cartilage waste using biochemical purification techniques for use as the active ingredient in the Detection Kit. Dr. Pratya described in more detail, "from the waste cartilage of cows, chicken, pork, fish, and sharks, we prepared purified protein and biochemical components to capture Hyaluronan for use in a simpler, less-expensive Detection Kit, and in the process substantially increased the value of meat processing waste cartilage."

From this success, the research team has secured a Thai patent and formed a Thai company with operations to be based in Singapore to produce a detection kit meeting international standards to be sold commercially in Japan, Britain, America, and Europe among other places.

Provided by Chiang Mai University