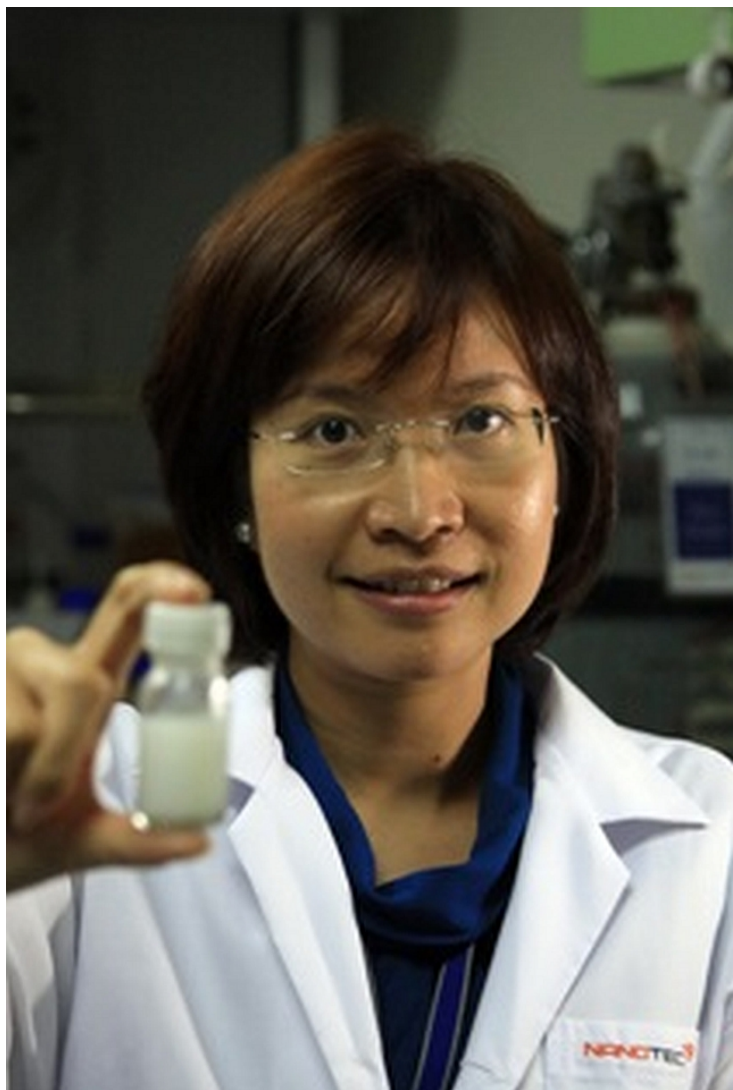


Chitosan nanoparticles to target breast cancer cells

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Singapore: Thai Researchers at the National Nanotechnology Center (NANOTEC) and King Mongkut's University of Technology Thonburi (KMUTT) developed a target drug delivery system using folate-conjugated pluronic F127/chitosan core-shell nanoparticles to deliver doxorubicin (DOX) to target cancer cells focusing on breast cancer. The research has been published in the *Journal of Nanomaterials*.

"DOX is one of the most commonly used chemotherapeutic agents for cancer treatment including breast cancer. However,

DOX is also considered a poor soluble drug that is toxic to healthy tissues" said Dr Nuttaporn Pimpha, researcher, Hybrid Nanostructure and Nanocomposite Laboratory, NANOTEC. "By using core-shell nanoparticles from folate-conjugated pluronic F127/chitosan, we were able to develop a delivery vector that has greater targeting ability, chemical stability and lower cytotoxicity."

Cancer is becoming a significant health problem in Thailand, as is the case in several developing countries. Cervix and breast cancer is the leading cause of death in Thai women. The only commercial DOX-encapsulated liposome available is Doxil. However, Doxil has a short half-life in microcirculation and is unstable in the blood stream. Hence there is a need to find a more controlled and stable DOX carrier system.