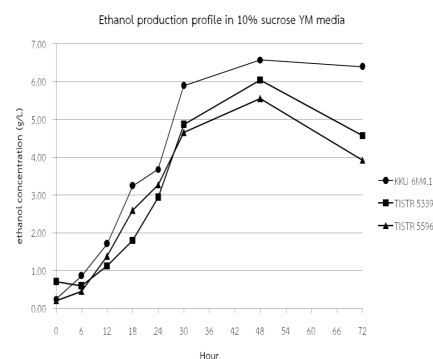
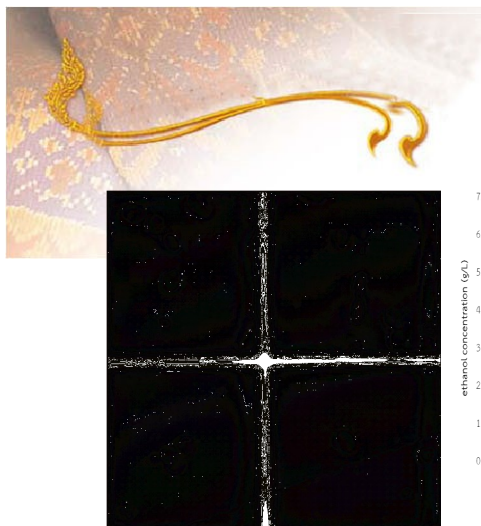
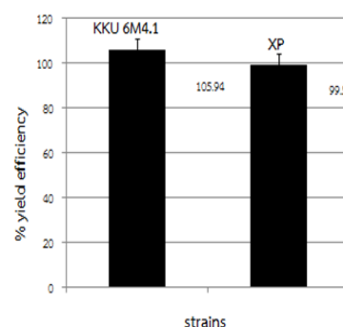


High ethanol production yeast



% yield efficiency of ethanol production in industrial scale



Product name	High ethanol production yeast
Intellectual property status	Microbial Register to Khon Kaen University
Assignee name	Khon Kaen University
Investor	Asst. Prof. Dr. Nipa Milintawisamai and coresearchers
Faculty	Faculty of Science
Abstract	<p>Yeast is an important microorganism for ethanol production in industry. Most ethanol industries in Thailand use molasses and starch as raw materials.</p> <p><i>Saccharomyces cerevisiae</i> KKU 6M4.1 isolated by Milintawisamai <i>et al.</i> (2008) has many distinguishing characteristics suitable for ethanol production as follows: high growth rate with wide range of pH 5-8, high invertase activity (first enzyme which breaks sucrose into glucose and fructose), high ethanol production, and tolerance to biocide (may be found in molasses).</p> <p>Ethanol production by <i>S. cerevisiae</i> KKU 6M4.1 was compared to 2 reference strains of high ethanol production yeasts: TISTR 5339 and TISTR 5596 in YM medium containing 10 % sucrose in static conditions at 30°C for 48 hours. Their ethanol productions were 6.57, 6.05 and 5.55 % (w/v) for KKU 6M4.1, TISTR 5339 and TISTR 5596, respectively. This shows that KKU 6M4.1 is a high ethanol production yeast. Industrial ethanol production (150,000 liters/day) by <i>S. cerevisiae</i> KKU 6M4.1 using molasses as a substrate is also well performed in batch fermentation at 30° C. The % alcohol production and % yield efficiency of industrial alcohol (IA) of KKU 6M4.1 is higher than an industrial yeast strain (XP) by 7.14% and 6.46% respectively. Sulphuric acid is not required for media pH adjustment in KKU 6M4.1 cultivation. It is good for successive operations. This indicates that <i>S. cerevisiae</i> KKU 6M4.1 could be a superior strain for industrial alcohol production with high efficient operation and green industry .</p>
Highlights of product	<ul style="list-style-type: none"> • High growth rate so takes shorter time to cultivate in biomass production. • High invertase activity • Grows well in a wide range of pH 5-8, decreasing use of acid or base for adjustment of medium pH • High ethanol production • Tolerant to biocide and contamination • Suitable for industrial alcohol production with highly efficient operation and green industry

Contact : Mrs. Jirapon Luengpailin / Ms. Panravee Kabinlapat

Intellectual Property Management Office, 2 Floor, Office of the President 2, Khon Kaen University, Mitraphab Rd., Amphur Muang,