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PISUT PUANGNAK: MUTATION OF A CELLULOLYTIC FUNGUS *Acrophialophora* sp. THESIS ADVISOR: ASSIST. PROF. HUNSA PUNNAPAYAK, Ph.D. THESIS CO-ADVISOR: ASSOC. PROF. MUKDA KUHIRUN; 106 pp. ISBN 974-334-890-5

Induced mutation in *Acrophialophora* sp. for increased cellulase production was carried out using 3 methods: ultraviolet (UV) light, N-methyl-N'-nitro-N-nitrosoguanidine (NTG) treatment, and a combination of both UV and NTG. Mutants were screened on CMC agar medium containing cycloheximide. Top 10% cellulase producing mutants were then tested for cellulase production ability in liquid production medium in comparison with the wild type *Acrophialophora* and *Trichoderma reesei* QM9414 at 30 and 40°C. *Acrophialophora* mutant strain UV10-14 exhibited an increase in exoglucanase activity, doubled that of the wild type *Acrophialophora* and quadrupled that of *T. reesei* QM9414 at 40 °C. Optimization study to find appropriate conditions for exoglucanase production in *Acrophialophora* mutant strain UV10-14 revealed that a culture medium containing 3% CMC as the sole carbon source, 0.08% ammonium sulfate as the nitrogen source, with an initial pH of 5.0, at 40°C, gave maximum enzyme activity of 0.076 U/ml.

ภาควิชา ..... - ..... ลายมือชื่อนิสิต .....

สาขาวิชา เทคโนโลยีทางชีวภาพ ลายมือชื่ออาจารย์ที่ปรึกษา .....

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