Algal Biotechnology

»ÃÐÇÑµÔ (Background)

ÊÒËÃèÒÂÊä»ÃÙÅÔ¹èÒ (Spirulina) à»ç¹áËÅè§â»ÃµÕ¹áÅÐÁÕÊÒÃà¤ÁÕÁÙÅ¤èÒÊÙ§ ¨Ó¾Ç¡¡Ã´ä¢ÁÑ¹¨Óà»ç¹ àªè¹ ¡Ã´ÅÔâ¹ÅÔ¾Ç¡ ¤ÅÍâÃ¿ÔÅÅì·ÕèãËéÊÕà¢ÕÂÇ ä¿â¤ä«ÂÒ¹Ô¹ãËéÊÕ¿éÒ áÅÐá¤âÃ·Õ¹ÍÂ´ì·ÕèãËéÊÕÊéÁá´§ «Ò§ÊÒÁÒÃ¶Ê¡Ñ´ÊÒÃÊÕà áÅÐà¤Ã×èÍ§ÊÓÍÒ§

¡ÅØèÁÇÔ¨ÑÂà·¤â¹âÅÂÔªÕÇÀÒ¾ÊÒËÃèÒÂ (Algal Biotechnology) à»ç¹Ë¹èÇÂ§Ò¹Ë¹Öè§ã¹ R&D Cluster ÁËÒÇÔ·ÂÒÅÑÂà·¤â¹ÃèÇÁ¡Ñº¹Ñ¡ÇÔ¨ÑÂ¢Í§Ê¶ÒºÑ¹¾Ñ²ÒáÐ½Ö¡ÍºÃÁâÃ§§Ò¹µé¹á°° ÁËÒÇÔ·ÂÒÅÑÂà·¤â¹âÅÂÔ¾ÃÐ¨ÍÁà¡ÅéÒ¸¹ØÃÕ áÅÐ¹Ñ¡ÇÔ¨ÑÈÙ¹Âì¾Ñ¹¸ØÇÔÈÇ¡ÃÃÁáÅÐà·¤â¹âÅÂÔªÕÇÀÒ¾ÁËè§ªÒµÔ â´ÂàÃÔèÁ¡ÒÃ´Óà¹Ô¹§Ò»ÃÐÁÒ³»Õ ¾.È. 2530 ´éÇÂâ¤Ã§¡ÒÃ “¡ÒÃ¹Ó¹éÓ·Ôé§¨Ò¡âÃ§§Ò¹á»é§ÁÑ¹ÊÓ»ÐËÅÑ§ÁÒà»ç¹áËÅè§ÍÒËÒÃà¾×èÍãªéàÅÕéÂ§ÊÒËÃèÒÂÊä»ÃÙÅÔ¹èÒ” (BIOTEC) áÐÐä´é´Óà¹Ô¹¡ÒÃÇÔ¨ÑÂ´éÒ¹¡ÒÃà¾ÒÐàÅÕéÂ§ÊÒËÃèÒÂ Êä»ÃÙÅÔ¹èÒ ¡ÒÃ¾Ñ²¹ÒÊÒÂ¾Ñ¸ØìµÅÍ¨¨¹·Ó¡ÒÃÇÔ¨ÑÂã¹ÃÐ´ÑºªÕÇâÁàÅ¡ØÅà¡ÕèÂÇ¡Ñº¡ÒÃáÊ´§ÍÍ¡¢Í§ÂÕ¹áÅÐàÍç¹ä«Áì·Õèà¡ÕèÂÇ¢éÍ§¡Ñº¡ÒÃÊÑ§à¤ÃÒÐËìÊÒÃà¤

ã¹»Õ ¾.È. 2545 ÈÙ¹Âì¾Ñ¸¸ØÇÔÈÇ¡ÃÃÁáÅÐà·¤â¹âÅÂÔªÕáËè§ªÒµÔ ÃèÇÁ¡Ñº¡ÅØèÁÇÔ¨ÑÂà·¤â¹âÅÂÔªÕÇÀÒ¾ÊÒËÃèÒÂ¨Ñ´µâ´ÂÁÕà»éÒËÁÒÀà¾×èÍ¼ÅÑ¡´Ñ¹ãËéà¡Ô´¤ÇÒÁÃèÇÁÁ×ÍÃÐËÇèÒ§ÀÒ¤àÍ¡ª¹áÅÐ¡ÅØèÁÇÔ¨ÑÂÌ à¾×èÍãËéà¡Ô´à¤Ã×Í¢èÒÂ ¡ÒÃà¾×èÍà¾ÔèÁ»ÃÐÊÔ¸ÔÀÒ¾¡ÒÃ¼ÅÔµ¢Í§ÀÒ¤ÍØµÊÒË¡ÃÃÁ ÃÇÁ¶Ö§¡ÅØèÁÇÔ¨ÑÂÊÒÁÒÃ¶¼ÅÔµ§Ò¹ÇÔ¨ÑÂãËéµÃ§µèÍ¤ÇÒ

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ãªéÊÒËÃèÒÂÊä»ÃÙÅÔ¹èÒà»ç¹âÁà´Å¢Í§¾×ª ÊÓËÃÑº¡ÒÃÈÖ¡ÉÒ¡ÒÃµÍºÊ¹Í§µèÍÊÀÒÇÐ¡´Ñ¹ (stress respond) ·Ñé§¡ÒÃÊÑ§à¤

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Êè§àÊÃÔÁãËéà¡Ô´¤ÇÒÁÃèÇÁÁ×ÍÃÐËÇèÒ§ÁËÒÇÔ·ÂÒÅÑÂáÅÐË¹èÇÂ§Ò¹àÍ¡ª¹ÀÒ¤ÍØµÊÒË¡ÃÃÁ·Õèà¡ÕèÂÇ¡Ñºà·¤â¹âÅÂÔ

§Ò¹ÇÔ¨ÑÂáÅÐ¾Ñ²Ò¢Í§¡ÅØèÁà¹é¹ 3 á¹Ç·Ò§ËÅÑ¡ ´Ñ§¹Õé

1. ¡ÒÃà¾ÒÐàÅÕéÂ§ (Mass Cultivation)

ÁØè§à¹é¹ãËéä´é¼Å¼ÅÔµáÅÐ»ÃÐâª¹ì¨Ò¡Å¼ÅÔµÁÒ¡·ÕèÊØ´ ÁÕ§Ò¹ÇÔ¨ÑÂ¶Ö§¼Å¢Í§»Ñ¨¨ÑÂÊÔè§áÇ´ÅéÍÁµèÍ¡ÒÃà¨ÃÔ-¢ áÅÐ¡ÒÃÈÖ¡ÉÒ´éÒ¹¡ÒÃ¨ÓÅÍ§·Ò§¤³ÔµÈÒÊµÃì (math model) ¢Í§ÃÐºàà¾ÒÐàÅÕéÂ§

2. ÊÒÃà¤ÁÕÁÙÅ¤èÒÊÙ§ (High Value Chemicals)

ÁÕ¡ÒÃ´Óà¹Ô¹§Ò¹ÇÔ¨ÑÂà¾×èÍãËéà¡Ô´Í§¤ì¤ÇÒÁÃÙéà¡ÕèÂÇ¡ÑºÊÒÃà¤ÁÕÁÙÅ¤èÒÊÙ§ã¹ÊÒËÃèÒÂÊä»ÃÙÅÔ¹èÒ â´ÂÈÖ¡ÉÒ
àªè¹ ÅÔ»Ô´ËÃ×Í GLA ä¿â¤ä«ÂÒ¹Ô¹ áÅÐâ¾ÅÕá«¤¤ÒäÃ´ì¨Ò¡ÊÒËÃèÒÂÊä»ÃÙÅÔ¹èÒ ÃÇÁ¶Ö§¡ÒÈÖ¡ÉÒ¤Ø³ÊÁºÑµÔ¡ÒÃà»ç

3. ¡ÒÃÈÖ¡ÉÒ´éÒ¹ªÕÇâÁàÅ¡ØÅ (Molecular biology)

ÁØè§à¹é¹ãËéà¡Ô´¤ÇÒÁÃÙé¤ÇÒÁà¢éÒã¨´éÒ¹ÊÃÕÇÔ·ÂÒ¢Í§ÊÒËÃèÒÂÊä»ÃÙÅÔ¹èÒ ÃÇÁ¶Ö§¡Åä¡ÒÃ¤Çº¤ØÁ áÅÐ¡ÒÃÊÑ§à
Proteomic Genomic áÅÐ In silico Spirulina modeling

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¨Ñ´½Ö¡ÍºÃÁá¡è¹Ñ¡ÇÔªÒ¡ÒÃ ÀÒ¤àÍ¡ª¹ ÃÇÁ·Ñé§ºØ¤¤Å·ÕèÊ¹ã¨à·¤¹Ô¤ áÅÐËÅÑ¡¡ÒÃ¡ÒÃà¾ÒÐàÅÕéÂ§

ÊÒËÃèÒÂÊä»ÃÙÅÔ¹èÒ (ÍÒÃìâ¸ÃÊä»ÃèÒ)

Ë¹Ñ§Ê×ÍÊÒËÃèÒÂÊä»ÃÙÅÔ¹èÒ (ÍÒÃìâ¸ÃÊä»ÃèÒ) ÁÕà¹×éÍËÒ´éÒ¹¤ÇÒÁÃÙé·ÑèÇä»à¡ÕèÂç¡ÑºÊÒËÃèÒÂÊä»ÃÙÅÔ¹èÒ áÅ
ÍÒËÒÃÊÑµÇì áÅÐÊÔè§áÇ´ÅéÍÁ ÃÇÁ·Ñé§à¡³ìÁÒµÃ°Ò¹¤ÇÒÁ»ÅÍ´ÀÑÂ¢Í§ÊÒËÃèÒÂÊä»ÃÙÅÔ¹èÒ

á»ÅáÅÐàÃÕÂºàÃÕÂ§â´Â ÃÑµ¹Ò ªÑÂ¡ÅéÒËÒ-, ³Ñ°ÂÒÀÃ³ì ªÔÃÐÊØÇÃÃ³ áÅÐÃÈ.ºØÉÂÒ ºØ¹¹Ò¤

ISBN 978-974-456-680-5; 51 Ë¹éÒ

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ª×èÍ¼Å§Ò¹: ¡ÒÃ¾Ñ²Ò¡ÃÐºÇ¹¡ÒÊÃéÒ§¡Ã´ä¢ÁÑ¹·ÕèÁÕ¾Ñ¹¸Ð¤ÙèÊÒÁ¾Ñ¹¸Ðã¹âÁàÅ¡ØÅ, gamma-linolenic acid ËÃ×Í GLA á
¹ÔÇ¤ÅÕâÍä·´ìáÅÐÅÓ´Ñº¡Ã´ÍÐÁÔâ¹¢Í§ÂÕ¹à´ÅµéÒ 6-´ÕáÊ··ÙàÃÊ (delta 6- desaturase) áÅÐÂÕ¹ à´ÅµéÒ 12-´ÕáÊ··ÙàÃÊ (delta
(Spirulina platensis) ã¹à«ÅÅìÂÕÊµì Saccharomyces cerevisiae

¼Ùé»ÃÐ´ÔÉ°ì: ¹Ê. ¾ÕÃ´Ò ¾ÃËÁÁÕà¹µÃ, ¹Ê. ÍÀÔÃ´Õ Ë§Êì·Í§, ¹Ê. ÀÒÇÔ³Õ à¡Ô´Ä·¸Ôì, Ms. Sanjukta Subudhi, ¹Ò§ ÊØÀÒÀÃ³ì

Â×è¹¨´ã¹»ÃÐà·Èä·Â àÁ×èÍµØÅÒ¤Á 2549

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Ê¹ã¨àÍ¡ÊÒÃ©ºÑºàµçÁµÔ´µèÍ e-mail: ratana@pdti.kmutt.ac.th, nattayaporn@pdti.kmutt.ac.th

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Dr. Sanjukta Sabudhi

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