

國立臺灣大學研發成果技術行銷表

臺大案號: 09A-120413

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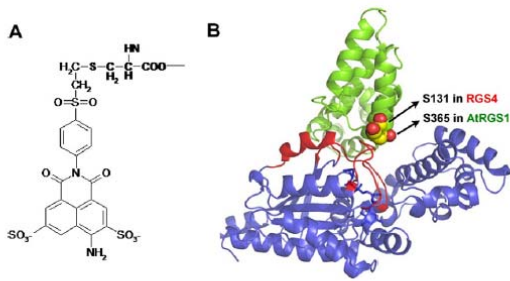
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<p>技術名稱</p>	<p>大量表達和製備具活性之 G-protein 訊息傳遞相關蛋白質</p>
<p>發明人/單位</p>	<p>楊啟伸 教授 / 生化科技系</p>
<p>技術內容</p>	<p>本製備方法, 可以得到大量具活性之 G-protein 訊息相關之蛋白質中的 alpha-i 次單元及 RGS2 和 RGS9 之功能單元。</p>
<p>技術成熟度</p>	<p><input type="checkbox"/>量產 <input type="checkbox"/>試量產 <input type="checkbox"/>雛型 <input type="checkbox"/>實驗階段 <input checked="" type="checkbox"/>概念 <input type="checkbox"/>其他</p>
<p>應用方式及 預期產品說明</p>	<p>可輕易執行阻斷或增進 G-蛋白質活性之小分子篩選。</p>
<p>技術創新度/優點</p>	<p>1. 表達量大; 2. 蛋白質穩定; 3. 不需真核細胞培養。</p>
<p>智慧財產權</p>	<p>專門技術知識 (Know-how)</p>
<p>已公開之圖片</p>	<div style="text-align: center;"> <p>Figure 2 consists of two parts. Part A shows the chemical structure of a cysteine residue (Cys) with a Lucifer yellow (LY) molecule attached to its sulfur atom. The structure includes a methyl group (H₃C), a hydrogen atom (H), and a carboxylate group (COO⁻) on the cysteine side chain. The LY molecule is a naphthalene derivative with a sulfonamide group (-NH₂) and two sulfonate groups (-SO₃⁻) on the naphthalene ring. Part B shows a 3D ribbon diagram of the RGS4/Gαi complex structure (PDB ID: 1AGR). The RGS4 domain is shown in green, and the Gαi domain is shown in blue. Two labeling sites are indicated by red spheres: S131 in RGS4 and S365 in ATRGS1. The switch regions in Gαi are shown in red.</p> </div> <p>Fig.2. Lucifer yellow (LY) labeling. (A) Chemical structure of LY-bonded Cys. (B) The Cys mutation sites for LY labeling in RGS4 and ATRGS1 are Ser131 and Ser365, respectively. Two labeling sites are shown as spheres in the RGS4/Gα_i complex structure (PDB ID: 1AGR). Green, RGS4; blue, Gα_i; red, switch regions in Gα_i.</p>

Marketing Abstract of NTU's Invention Disclosure

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Title	Expression and preparation of functional G-protein with fluorescence labeling
Inventor (s)	Chii-Shen Yang, Ph.D.
Brief Description	G-protein system mediates many functionally exertion of hormones and it is a major target for potential medical modulator screening. Our method is able to overexpress large amount of functional G-protein regulator proteins with <i>E. coli.</i> ; it significantly facilitates the study in G-protein drug screening.
Development Stage	<input type="checkbox"/> Production <input type="checkbox"/> Trial production <input type="checkbox"/> Prototype <input type="checkbox"/> Lab scale <input checked="" type="checkbox"/> Idea <input type="checkbox"/> Others:
Fields of Application	It can potentially be further adopted as protein production or for drug screening study.
Advantages	This method produces large amount of functional G-protein. When compared with most currently adopted methods, which use eukaryotic cell culture to produce G-protein, the yield and cost with our method is much more economic and effective.
IP Right(s)	Know-how
Non-confidential Picture	<div style="text-align: center;">  </div> <p>Fig.2. Lucifer yellow (LY) labeling. (A) Chemical structure of LY-bonded Cys. (B) The Cys mutation sites for LY labeling in RGS4 and AIRGS1 are Ser131 and Ser365, respectively. Two labeling sites are shown as spheres in the RGS4/Gα₁ complex structure (PDB ID: 1AGR). Green, RGS4; blue, Gα₁; red, switch regions in Gα₁.</p>