

RPM0013

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# Forskolin (毛喉素) (腺苷酸环化酶激活剂)

Catalog No.: RPM0013

## Sequence Information

**Species** Gene ID Swiss Prot  
C22H34O7

### Tags

固体

### Synonyms

Forskolin; Coleonol; Colforsin; 毛喉素;  
佛司可林; 腺苷酸环化酶激活剂

## Product Information

**Source** Purification  
> 98%

### Endotoxin

Adenylyl cyclase: 0.5  $\mu$ M

### Formulation

DMSO : 55 mg/mL (133.98 mM); H<sub>2</sub>O :  
不溶; Ethanol : 15 mg/mL (36.5 mM).

### Reconstitution

## Contact

 [www.abclonal.com](http://www.abclonal.com)

## Background

Forskolin (Coleonol) 属于天然产物，是一种腺苷酸环化酶激活剂 (EC<sub>50</sub>=0.5  $\mu$ M)。Forskolin 可以增加 cAMP 水平，可以激活 PXR 和 FXR，也可以诱导细胞自噬。Forskolin 对心脏产生正性肌力作用，具有血小板抗凝集和降压作用。

## Basic Information

### Description

Forskolin (毛喉素) (腺苷酸环化酶激活剂)

### Bio-Activity

体外活性/In vitro:

- 1.用Forskolin ( 0.01-10  $\mu$ M ) 处理大鼠肾上腺髓质嗜铬瘤细胞PC12 3-48 h, MTT法检测细胞生长抑制情况。10  $\mu$ M Forskolin处理后, 细胞活力迅速下降, 处理6 h后细胞活力下降为88.4%, 处理48 h后细胞活力下降为60.5%。[1]
- 2.用Forskolin ( 1-100  $\mu$ M ) 处理人骨髓瘤细胞U266、H929、INA-6、RPMI 8226和OPM-2 72 h, Flow Cytometry检测细胞死亡情况。Forskolin剂量依赖性诱导人骨髓瘤细胞死亡, 其中U266、OPM-2和INA-6比H929和RPMI 8226细胞更敏感。[2]
- 3.用Forskolin ( 1-100  $\mu$ M ) 处理人IL-2依赖性白血病细胞Kit 225和人白血病细胞MT-2 20 min, ELISA测定cAMP浓度。Forskolin诱导cAMP水平上调, 在50-100  $\mu$ m之间达到最大水平。[3]

体内活性/In vivo:

- 1.将Forskolin ( 4-5 mg/kg in PBS/DMSO solution (15:1) ) 腹腔注射给携带鼠多发性骨髓瘤肿瘤MOPC315的BALB/c nude小鼠, 在肿瘤细胞注射后的第2/4/6天给药, 检测体内抗肿瘤活性。所有小鼠最终都发生了肿瘤, 但Forskolin显著延缓了体内肿瘤的生长。提高cAMP的化合物可能在治疗多发性骨髓瘤方面具有治疗潜力。[4]
- 2.将Forskolin ( 50 mg/kg ) 灌胃给药给STZ诱导糖尿病模型的C57BL/6小鼠, 每周一次, 持续十二周, 研究Forskolin对糖尿病条件下视网膜炎症的影响。与正常对照组相比, 糖尿病对照组和Forskolin治疗组的视网膜葡萄糖浓度均增加, 但由于葡萄糖转运蛋白1表达下调, Forskolin处理组仅为糖尿病对照组的约68.06%。与正常对照组相比, Forskolin治疗组和糖尿病对照组的ICAM-1和TNF- $\alpha$ 表达上调, 但Forskolin处理组的这两种炎症因子表达水平分别为糖尿病对照的68.75%和75.37%。[5]

激酶实验/Kinase Assay:

For Jak3 kinase assays, Fsk-treated MT-2 cells were lysed, clarified, and immunoprecipitated using Jak3 antibody as described above. Kinase reactions were carried out as described previously at 30°C for 20 min. For PKA kinase assays, untreated MT-2 cells were lysed, and Jak3 was immunoprecipitated and bound to PAS beads as described previously. Immunoprecipitated Jak3 was washed with kinase buffer (50 mM HEPES-NaOH (pH 7.4), 10 mM MgCl<sub>2</sub>, 0.5 mM EGTA, 0.5 mM DTT, 20  $\mu$ g/ml aprotinin, 10  $\mu$ g/ml leupeptin, 1  $\mu$ g/ml pepstatin A) and incubated with 200  $\mu$ M ATP and purified protein kinase A catalytic subunit (PKAc) as indicated in the figure legends. Kinase reactions were carried out at 32°C for 30 min followed by vigorous washing of the beads with cold kinase wash buffer as described previously. For [ $\gamma$ -<sup>32</sup>P]ATP radiolabeled kinase assays using recombinant Jak3, Hek293 cells were transfected with wild type (WT) Jak3 or kinase-dead Jak3 K855A using Lipofectamine 2000 according to the manufacturer's instructions. Cells were lysed and immunoprecipitated with Jak3 antibody. Jak3-bound PAS beads were washed three times in cold lysis buffer

followed by kinase buffer. Kinase reactions were initiated by adding 10  $\mu$ Ci [ $\gamma$ -<sup>32</sup>P]ATP, 10  $\mu$ M unlabeled ATP, and 1  $\mu$ g of purified PKAc to Jak3-bound PAS bead reaction mixtures. Kinase reactions were performed at 32°C for 30 min. Jak3-bound PAS beads were washed three times in radioimmunoassay buffer (10 mM Tris-HCl, pH 7.4, 75 mM NaCl, 20 mM EDTA, 10 mM EGTA, 20 mM Na<sub>4</sub>P<sub>2</sub>O<sub>7</sub>, 50 mM NaF, 20 mM 2-glycerolphosphate, 1 mM p-nitrophenyl phosphate, 0.1% Triton X-100) and one time in kinase wash buffer. The reactions were stopped by adding 2 $\times$  SDS-PAGE sample buffer followed by SDS-PAGE. Coomassie stainable Jak3 bands were excised from the PVDF membrane and subjected to phosphoamino acid analysis [2].

### **Shipping**

The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

### **Operational Notes**

For your safety and health, please wear a lab coat and disposable gloves for handling.

### **Storage**

Store at -20°C. store at low temperature, store under nitrogen

Powder: -20°C for 3 years

In solvent: -80°C for 1 year

Shipping with blue ice/Shipping at ambient temperature. keep away from direct sunlight, keep away from moisture, store at low temperature

Powder: -20°C for 3 years

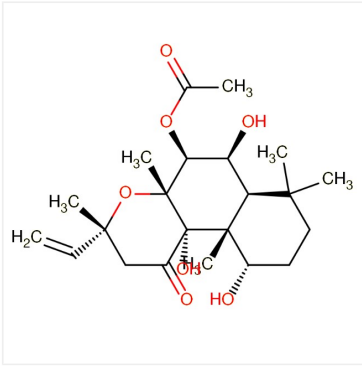
In solvent: -80°C for 1 year

Shipping with blue ice/Shipping at ambient temperature.

Avoid repeated freeze/thaw cycles.

## Validation Data

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Chemical structure of Forskolin, CAS  
No.:66575-29-9



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