

## Forcedyn® Quality Assurance

Forcedyn® being our flagship product undergoes utmost care and attention, right from the selection of planting material, to planting, harvesting, sorting and processing. Every measure is taken to ensure safe, reliable and effective product reaches our customers. Clinical study reports, safety data, HPLC-profiles are available upon request.

### Specification (ex: Coleus Forskohlii Extract 10%)

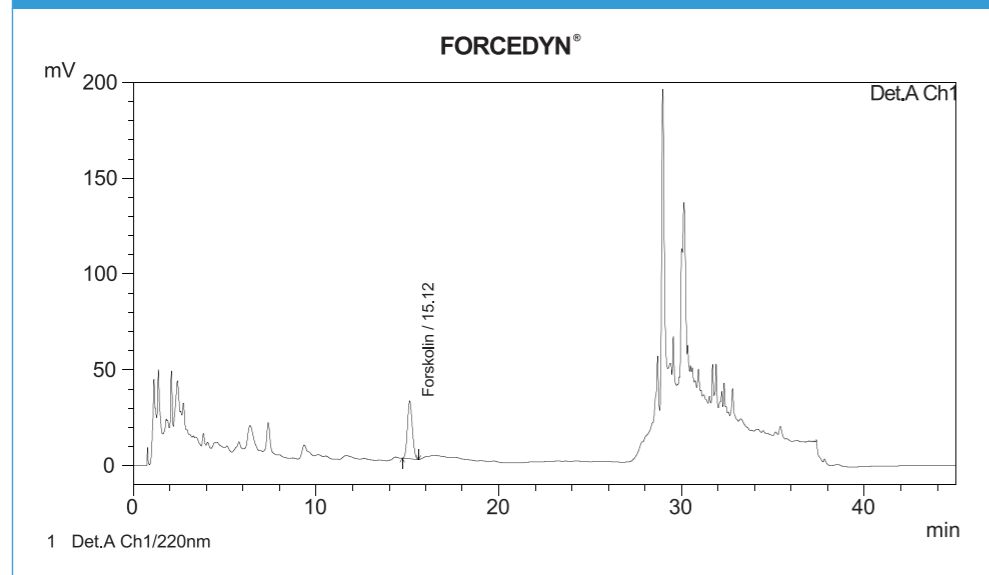
Description	: Dark brown to brown color powder with characteristic odor
Identification	: HPLC
Loss on drying	: Not more than 6.0%
Solubility	: Soluble 60% in water, 50% in alcohol
Heavy metal	: Not more than 20 ppm
Arsenic	: Not more than 1.0 ppm
Lead	: Not more than 10 ppm
Tapped Bulk Density	: Between 0.30 and 0.70 g/ml
Loose Bulk Density	: Between 0.15 and 0.45 g/ml
Content of Forskolin	: Not less than 10%
Microbial Profile	: As per JPN food regulation

### FORCEDYN® Available Grades:

10%, 20%, 40% and 98% HPLC standardized Coleus Forskohlii Powder Extract



FORCEDYN® HPLC test confirmation for content of Forskolin



# FORCEDYN®



## What's FORCEDYN®:

- FORCEDYN® is a clinically tested standardized extract of Coleus Forskohlii.
- C. forskohlii. is a member of the mint family, Lamiaceae. Coleus is an important indigenous medicinal plant of India having thousands of years of application in Indian system of medicine - Ayurveda.
- Indian sub- continent is considered as the place of origin of C. Forskohlii. It grows wildly in the subtropical, temperate climates of India, Nepal, Sri Lanka and Thailand.
- Sustainable cultivation in Indian weather conditions; C. forskohlii thrives well in red, sandy loam soils, in humid climates with relative humidity of 83% - 95%. It has been used in India traditionally as a pickle, spice and vegetable.



### BIO ACTIVES JAPAN CORPORATION

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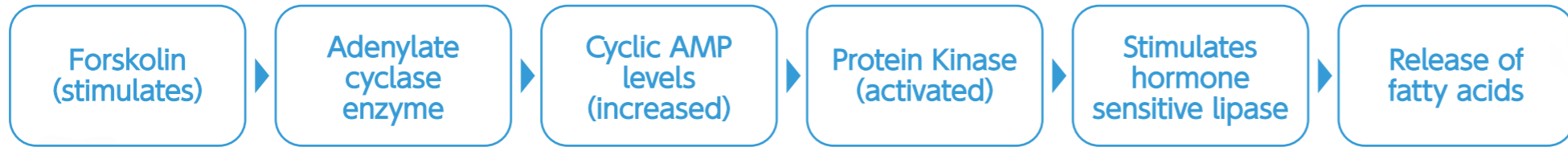
The statements and product shown here have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease. FORCEDYN® is a registered trademark of BIO ACTIVES JAPAN CORPORATION.

# F O R C E D Y N ®

BIO ACTIVES JAPAN CORPORATION



## Forskolin



● Coleus forskohlii is the only source of the diterpenoid – Forskolin – exclusively found in C. forskohlii and not detected in other Coleus species.

● Forskolin acts in numerous pathways making the fat in the body to melt away. Forskolin activates adenylate cyclase enzyme which in turn activates cyclic adenylate cyclase (cAMP) in fat cells leading to stimulation of lipase to burn the fat.



### FORCEDYN<sup>®</sup> offers 100% traceability & sustainability

#### FORCEDYN<sup>®</sup> cultivation

- Selection and propagation of cultivar nurseries
- Monitored cultivation & harvesting process
- Harmful pesticide free cultivation process
- Real-time software enabled track and trace technology
- Year-round cultivation to ensure stable supply



#### FORCEDYN<sup>®</sup> processing

- Dedicated raw material collection centers across cultivating regions in India
- Dedicated drying yards and sorting facility
- Automated sorting and cleaning process



#### FORCEDYN<sup>®</sup> extraction

- Dedicated continuous extraction facility
- ISO, GMP, Kosher and HALAL complying line
- Proprietary extraction process, ensuring harmful solvent-free processing



#### FORCEDYN<sup>®</sup> confirmation

- Every lot tested for active components – Forskolin (standardizations 10% ~ 98%) by HPLC
- Heavy Metals, Pesticides, Physical analysis, Microbiological analysis for every lot
- LD50, sub-acute, chronic toxicity tests conducted (Japan & India)
- Clinically tested for weight management properties and safe administration (Japan & India)



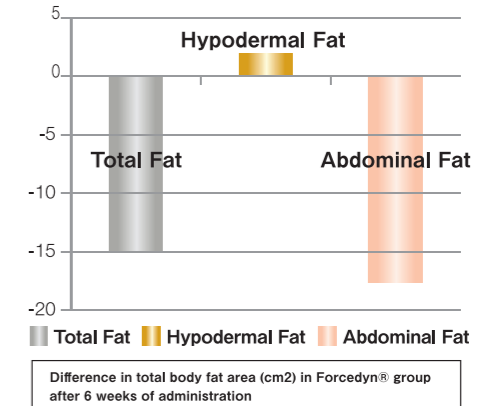
### Clinical Indications

#### Invitro Study: Forcedyn<sup>®</sup>

In vitro studies using Forcedyn<sup>®</sup> standardized to 98% and 40% Forskolin, had pancreatic- lipase inhibitory activity at various concentrations. The inhibitory activity was found to be 74.5% and 42.7% for Forskolin 98% and Forskolin 40% respectively at a concentration of 100 mcg/ml. These results indicate the potential pancreatic lipase inhibitory activity of Forcedyn<sup>®</sup> indicating their application as safe and effective way to manage digestive fatty acids, prevent excessive accumulation of fat in organs (Liver), visceral fat (abdomen), and in peripheral tissues in the form of white fat (storage).

(Study # 11022; Central Laboratory, New Drug Development Research Center, Inc; [452-1 Toiso, Eniwa-shi, Hokkaido, Japan])  
 \*\*Patent Pending (JPN)

#### BODY FAT AREA

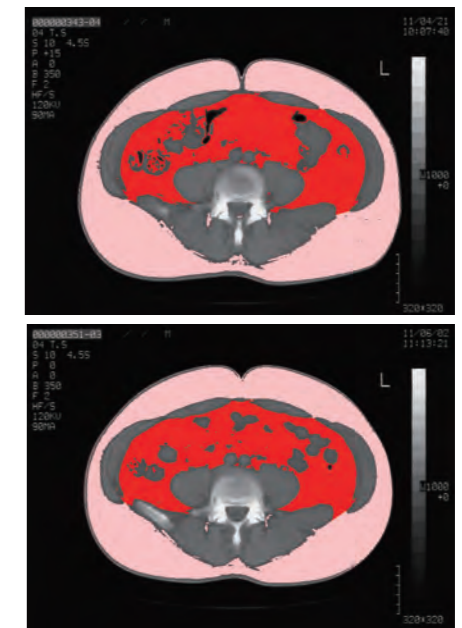


#### Clinical Study:

### Effect of six weeks administration of Coleus Forskohlii Extract on body fat

A 6-week placebo, controlled clinical study involving oral administration of Forcedyn<sup>®</sup> (10% forskolin) was conducted on 16 adult subjects. The objective of the study was to evaluate the effectiveness and safety of Forcedyn<sup>®</sup> in reducing body fat. Subjects received 1000 mg of Forcedyn<sup>®</sup> orally for 6 weeks daily. At the end of the study, it was concluded that:

- The body fat percentage in Forcedyn<sup>®</sup> administered group was significantly reduced in comparison to the placebo. The placebo group showed an increase in body fat.
- Abdominal CT scans of the subjects, confirmed decrease in body fat, evident from decrease in total fat, subcutaneous fat and abdominal fat in Forcedyn<sup>®</sup> administered group when compared with the placebo group.
- Forcedyn<sup>®</sup> administered group did not show any subjective symptoms or any abnormal observations. Forcedyn<sup>®</sup> was found to be safe and well tolerated in this study.
- Additionally, this clinical study showed: reductions in body weight, BMI, waist circumference and calorie intake in the Forcedyn<sup>®</sup> administered group.



Abdominal CT scan image showing difference in total body fat area (cm2) in Forcedyn group (No:4 - T.S) after 6 weeks of administration

(Reference: Confirmatory study of the body fat reducing effect of Indian herb [Coleus Forskohlii extract – Forcedyn<sup>®</sup>] after six weeks of oral administration – Study No: 11023, Fukuhara Clinic, Hokkaido, Japan)