

P1

Domain function and relevant enzyme activity of
cycloinulooligosaccharide fructanotransferase
from *Paenibacillus polymyxa*

Mi-Kyung Ko, Kyung-Ok You, Kwang-Hyeon Kim, Byung-Woo Kim and Hyun-Ju Kwon

Department of Life Science and Biotechnology, Dongeui University, Busan 614-714, Korea

Cycloinulooligosaccharide fructanotransferase (CFTase) converts inulin into cycloinulooligosaccharides (cyclofructan, CF) of β -(2 \rightarrow 1)-linked D-fructofuranose as well as hydrolysis of cyclofructan. Sequences analysis indicated that CFTase was divided into five distinct regions containing three repeated sequences (R1, R3, and R4) at the N-terminus and C-terminus. Each domain function was investigated by comparison of wild type CFTase enzyme (CFT148) and deletion mutant proteins (CFT108: R1 and R3 deletion; CFT130: R4 deletion; and CFT88: R1, R3, and R4 deletion) of CFTase. The CFT108 mutant had both CFTase and CF hydrolyzing activity as CFT148 did. CFTase activities and CF hydrolysing activities were disappeared in CFT130 and CFT88 mutants. These results indicated that the C-terminal R4 region of *P. polymyxa* CFTase is necessary for cyclization and hydrolyzing activity.

P2

Development of silver-bio new functional product with
sexual activity responses

Lee, Jai-Heon*, Shi Bing An¹ and Dongzhu An²

Dong-A University, Busan 604-714, Korea; ¹Washington University, School of Acupuncture and Oriental Medicine, Annandale, VA 22003, USA; ²Yengi Oriental Medical Research Center, Yengil, China.

The goal of this research was to investigate the scientific effect of oriental medicine which has been used for increase sexual activity. The compounds of the oriental medicine was analyzed using HPLC. The compounds was used for investigation of the changes of serum testosterone level, intracavernous pressure, nitric-oxide synthase (NOS) level, expression of NOS mRNA, and penicle smooth muscle content in 15 month-old rats.

The concentration of the serum testosterone level, intracavernous pressure, NOS level, and penicle smooth muscle content were significantly increased in treated aged rats compared with no treated aged rats. Expression of NOS mRNA of treated aged rats was recovered comparable to 3 months rats.

It is suggested that the compounds of oriental medicine used in this study is highly effective to increase sexual activity.