

ABSTRACT SUBMISSION FORM**Submission Deadline: Dec. 20, 2002****■ Author's Information**

Date :

First Name	Won Hee		Last Name	Kim	
Title	<input type="checkbox"/> Prof. <input type="checkbox"/> Dr. <input type="checkbox"/> Mr. <input type="checkbox"/> Ms. <input type="checkbox"/> Other		Position	Researcher	
Institution	Korea Food & Drug Administration		Department	Drug Evaluation Dept	
Address	# 5 Nokbun-dong, Eunpyong-gu, Seoul, Korea				
City	Seoul	Zip Code	122-704	Country	Korea
E-mail	won4207@hanmail.net	Telephone	82-2-380-1721	Fax	82-2-380-1723

■ Co-Author

First Name	Last Name
Eun-Hie	Koh
Sang-Sook	Choi
Kyung Hun	Son
Kyung Shin	Lee
Won-Jun	Yang

■ Presentation Preference (Please check only one)

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■ Subject Classification

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- Advances in Formulation Technology
- Advances in Evaluation techniques for efficacy and safety

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C/O Co & Ex Co., Ltd.

5Fl. Seam Bldg., 184-4 Sukcheon-dong, Songpa-gu, Seoul 138-844, Korea

Tel: +82-2-416-3672, 416-3673 Fax: +82-2-424-5675

E-mail: ifsc2003@ifsc2003.or.kr

Homepage: www.ifsc2003.or.kr

A study on the melanin synthesis inhibition of some natural plant extracts

W. H. Kim¹, K. H. Son¹, K. S. Lee¹, W. J. Yang², E. H. Koh³, S. S. Choi¹

¹ Drug Evaluation Department, Korea Food & Drug Administration, Seoul 122-704, Korea

² Dept of Evaluation, Korea Advanced Food Institute, Seoul 137-060, Korea

³ Department of Chemistry, College of Natural Science, Duksung Women's University, Seoul 132-030, Korea

As melanin is a key material for skin pigmentation, inhibitors of melanin formation have been used to cosmetics and drugs to prevent hyperpigmentation. Therefore, search for effective inhibitors from various plants were attempted.

For this purpose, I examined *in vitro* tyrosinase assay system. Tyrosinase showed a maximal activity at 4 units concentration of tyrosinase, 10 minutes, 42°C and pH 6.5.

To investigate the potency of some natural plant extracts as melanin synthesis inhibition agent, in this study, 17 species of natural plants were selected and fractions using M.C. (methylene chloride), EtOAc (ethyl acetate), n-BuOH (n-butanol), H₂O were extracted from natural plants. In order to screen the active extracts, tyrosinase inhibitory activities of 68 extracts were studied and chosen 16 extracts. Substances which have tyrosinase inhibitory activity were contained in nonpolar solvents. IC₅₀ (Inhibition concentration 50%) values using tyrosinase inhibition assay and UV absorption ability were measured on 16 natural plant extracts. Melanin contents in cells were studied on extracts having low IC₅₀ values such as M.C. extracts of *Benincasa hispida*·*Prunus persica*, *Coptis chinensis*·*Phellodendron molle*·*Scutellaria baicalensis*, *Prunus persica*, *Prunus armeniaca* and EtOAc extracts of *Poncirus trifoliata*. M.C. extracts of *Prunus armeniaca*, *Prunus persica*, *Benincasa hispida*·*Prunus persica*, *Coptis chinensis*·*Phellodendron molle*·*Scutellaria baicalensis* more inhibited on melanin biosynthesis than arbutin at less than 25 µg/ml concentration. This result shows that M.C. extracts of *Prunus armeniaca*, *Prunus persica*, *Benincasa hispida*·*Prunus persica* and *Coptis chinensis*·*Phellodendron molle*·*Scutellaria baicalensis* have inhibitory activity on TRP-1, TRP-2 as well as tyrosinase.