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|---------|-----------------------------|----------|--------------------------------|
| ▪ Field | Studies on natural products | ▪ Office | Natural Product Chemistry 8510 |
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## | Educational background

- 1980 ~ 1990 Major in chemistry, Korea University (Bachelor)
- 1992 ~ 1994 Major in organic chemistry, Korea University (Master)
- 1995 ~ 2000 Major in organic chemistry, Korea University (Doctor)

## | Major careers

- 2008.03 ~ The Department of Food Science & Nutrition, the Natural Science, Hallym University (Professor)
- 2003.04 ~ 2008.02 The Regional Innovation Center - The Regional Research Center (RRC-RIC), Hallym University (Research Professor)
- 2001.12 ~ 2003.01 Industry Professional Practice (IPP) of University of Lausanne, Switzerland (Postdoctoral Training)
- 2001.02 ~ 2001.11 Seoul National University (Postdoctoral Training)
- 2000.12 ~ 2001.01 Tohoku University, Japan (Visiting Researcher)
- 1994.09 ~ 2000.08 Assistant of the Natural Products Research Institute, Seoul National University (Researcher)
- 1992.09 ~ 2003.08 Assistant and Part-time Lecturer of the Department of Chemistry, Korea University

## | Studies & Books

### ■ Studies on natural products

- Separation/Purification/structural crystal of effective materials from natural products by using UPLC, MPLC, HSCCC and open column chromatography
- Rapid search of bioactive substances by utilizing new On-line bioassay and enzyme binding assay (UF)
- A study on the development of the optimized extraction process and scale up process using the response surface method (RSM)
- A study on Drug-Drug Interaction (DDI) between natural products and medicine and medical supplies using CYP450 enzyme
- A study on biotransformation metabolome of natural products (PCA & Metabolites)
- The development of dosage forms with the increase in absorption based on effective materials (Improvement of Solubility and PAMPA)
- The development of environment-friendly synthesis method of polyphenol derivatives using the enzymatic synthesis method

### ■ Major natural products

- Is arranging the studies on the structural investigation and raw material standardization of bioactive ingredients of Salvia Miltiorrhiza Flower, Agrimonia Pilosa, Solidago Virgaurea, Salvia Plebeia, Stauntonia hexaphylla, Maackia Amurensis, Hairy catchfly, Narrow-leaf hosta, Valeriana fauriei, insect enzyme hydrolysate (Yellow worm), Gastrodia Elata Root, or MACA.

### ■ Functional (Bioactive) research fields

- The development of materials for curing diabetes and diabetic complications (Natural ingredients including synthetic chemicals)
- The development of individual health functional food (The reduction of postprandial glycaemia and body fat, health of bones or joint, and the improvement of blood triglycerides)
- The development of materials of functional cosmetics from natural substances (Skin-brightening, anti-wrinkle, sun protection, or prevention of hair loss)
- Materials for curing pain from synthetic derivatives of natural effective materials

## | Others

### ■ Theses

- Composition containing extracts or fractions from *Maackia amurensis* having anti-obestic activities
- Composition of *Hemerocallis fulva* L Extracts having hair growth promotion
- Material Promoting Absorption of Vitamin D and Composition Comprising the Same)
- *Perilla frutescens* (L.) Britton var. *acuta* (Thunb.) Kudo Tea, Method for Preparing the Same, Beverage Composition Comprising *Perilla frutescens* (L.) Britton var. *acuta* (Thunb.) Kudo Extract, and Method for Preparing the Same)
- Composition with the depression effect of advanced glycation end products containing *Prunella vulgaris* as an effective ingredient.
- A COMPOSITION FOR INHIBITING TESTOSTERONE 5-ALPHA REDUCTASE
- COMPOSITION FOR PREVENTING OR TREATING DIABETES INDUCED COMPLICATION CONTAINING DICAFFEYOYL QUINIC ACID DERIVATIVES
- The method that protein transport domain and therapeutic protein increase the introduction of fusion protein into cells or tissue by adding pergolide in shared and combined fusion protein
- COMPOSITION COMPRISING EXTRACT FROM GERANIUM THUNBERGII FOR PREVENTING OR TREATING VARIOUS DIABETIC COMPLICATIONS
- COMPOSITION FOR INHIBITING DEVELOPMENT DIABETESINDUCED COMPLICATION CAINTAINING ZINGIBERACEAE EXTRACT
- COMPOSITION FOR ALALGESIC COMPRISING AN EXTRACT OF AGRIMONIA
- COMPOSITION FOR INDUCING NAD(P)H:QUINONE OXIDOREDUCTASE AND THE USE THEREOF
- ANTI-CANCER COMPOSITION CONTAINING EUPATORIUM JAPONICUM EXTRACT
- EXTRACT
- Anti-inflammatory skin composition containing *Caesapinia sappan*, *Siegesbeckia glabrescens* Makino, and cell-transducing heat shock protein 27 fusion protein
- Composition for inhibiting a cancer metastasis comprising an extract of licorice as an active ingredient
- Composition for treating diabetes or diabete-induced complication containing an extract from *Opuntia ficus-indica* root
- Composition for treating diabetes or diabetes-induced complication containing an extract from *Codonopsis lanceolata*
- COMPOSITION FOR INDUCING NAD(P)H:QUINONE OXIDOREDUCTASE AND THE USE THEREOF
- Pharmacological or functional food composition for preventing or treating dementia and improving the cognitive ability containing *Suaeda Asparagoides* Extract
- A METHOD FOR ISOLATION OF ANTIOXIDANT FROM GLYCYRRHIZA URALENSIS
- PHARMACEUTICAL OR FUNCTIONAL FOODS COMPOSITION FOR PREVENTING OR TREATING DEMENTIA AND IMPROVING COGNITIVE ABILITY COMPRISING AN EXTRACT OF *Agarum clathratum*
- *Vaccinium uliginosum* L. extract which enhances cell transducibility of superoxide dismutase fusion protein
- COMPOSITION FOR PREVENTING OR IMPROVING DIABETES INDUCED COMPLICATION CONTAINING ASTER AGERATOIDES EXTRACT
- Diabetic renal fibrosis inhibiting composition purple corn extract ingredient
- Pharmaceutical composition containing chalcone compounds for treating malarial disease
- Pharmaceutical composition containing chalconecompounds for treating tumor
- Herbicide composition comprising methyl-p-hydroxybenzoate as an efficient content and method for Purifying the same from *Epimedium*

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- COMPOSITION FOR PREVENTING OR IMPROVING THE BRAIN ISCHEMIA DISEASE CONTAINING EXTRACT OF CHRYSANTHEMUM INDICUM VAR. ALBESCENS
- Pharmaceutical composition for preventing and treating diabetes comprising extract of Mulberry leaves-*Phellinus linteus* mycelia
- COMPOSITION FOR PROTECTING LIVER CONTAINING RED GINSENG AND PUERARIAE RADIX
- EXTRACT OF ANTI-OBESITY GINSENG WITH ANTI-OBESITY EFFECT COMPRISING HIGH CONCENTRATION OF LESS POLAR GINSENOID AND METHOD OF PREPARING THE SAME
- COMPOSITION CONTAINING HYDROLYSATES OF MACKEREL PIKE FOR PREVENTION OR ATTENUATION OF COGNITIVE IMPAIRMENT
- EXTRACT OF GINSENG OR RED GINSENG COMPRISING GINSENOSE Rg1 OR Rg3 IN HIGH CONCENTRATION AND METHOD OF PREPARING THE SAME
- COMPOSITION FOR PREVENTING OR IMPROVING DIABETES INDUCED COMPLICATION CONTAINING PHELLINUS BAUMII EXTRACT
- COMPOSITION FOR PREVENTING OR IMPROVING THE ISCHEMIA DAMAGE CONTAINING HYDROLYSATES OF MACKEREL PIKE
- COMPOSITION FOR INHIBITING DEVELOPMENT DIABETES INDUCED COMPLICATION CONTAINING ELSHOLTZIA CILIATA EXTRACT

#### ■ Patents

- *Armeria Maritima* extract with the hair growth promotion effect and composition containing it.
- *Juncus effusus* L. extracts with the effects to suppress aglucosidase, the regulatory enzyme of postprandial glycaemia
- Manufacturing methods of *Perilla frutescens* var. leaves and *Hydrangea macrophylla* leaves with the excellent antioxidant activity and manufacturing methods of *Perilla frutescens* var. and *Hydrangea macrophylla* tea bags and beverages containing them as the effective ingredients
- A manufacturing method of roasted lentils with the excellent antioxidant activity and tea bags and beverages containing it as the effective ingredient.
- Phenolic compounds from *Perilla frutescens* var. with the effects to reduce blood cholesterol and improve hyperlipidemia
- A manufacturing method of *Akebia Quinata* extracts with the function to suppress acetylcholine and food composition for improving memory containing it.
- Food composition for improving vessel diseases related to cholesterol metabolism containing *Perilla frutescens* var. extracts
- Anti-Obesity Food Composition Containing *Solidago Virgaurea* Extract and Method for Preparing the Same
- COSMETIC COMPOSITION COMPRISING THE FERMENTED EXTRACT OF *ABELIOPHYLLUM DISTICHUM*
- A composition comprising an extract of *Reseda odorata* L. for treatment or inhibition of diabetic complications
- 5-membered heterocyclic derivatives, process for preparing thereof and pharmaceutical compositions containing them
- COMPOSITION FOR TREATING OR PREVENTING ANTIDEPRESSANT CONTAINING EXTRACT OF TARO
- PHARMACEUTICAL COMPOSITION AND HEALTH FOOD COMPOSITION FOR PREVENTION OF BRAIN TUMOR CONTAINING AN EXTRACT OF *PERSICARIA SP*
- COMPOUNDS FOR INHIBITING LIPID OXIDATION AND A METHOD FOR PRODUCING THE SAME
- Composition for improving, preventing or treating obesity containing extracts or fractions from *Nardostachys chinensis* BATAL
- Improving Vascular Disorder Related Cholesterol Metabolism Food Composition Containing *Solidago Virgaurea* Extract and Method for Preparing the Same
- Composition for improving, preventing or treating diabetes-induced complication containing extracts or fractions from *Colocasia esculenta*
- A Composition having activity of blood glucose regulation and aldose reductase inhibition comprising the extract of *Magnolia grandiflora* L. as an active ingredient for preventing and treating diabetic complications
- Method for Extracting Extract Having Linarin Improving Memory in *Chrysanthemum*
- Cosmetic composition containing fermented *Morus bombycis* extract having anti-oxidant effect
- COMPOSITION FOR INHIBITING DEVELOPMENT DIABETES INDUCED COMPLICATION CONTAINING *Syringa oblata* var. *dilatata* EXTRACT
- Composition for treating diabetes and diabetes-induced complication containing an extract from *Agrimonia pilosa*
- A composition comprising dehydroglyasperin C for the treatment of the decline or damage of cognitive function
- COMPOSITION FOR ANTICANCER DRUGS COMPRISING AN EXTRACT OF *DIANTHUS CHINENSIS* L. VAR. *CHINENSIS*
- COMPOSITION FOR ANTICANCER DRUGS COMPRISING AN EXTRACT OF *MORUS BOMBYCIS* KOIDZ
- Perfume composition for expressing the fragrance of *Convallaria keiskei*
- The composition of yellow flag iris extract ingredient for improvement and prevention of osteoporosis
- The components of common sage for improvement and protection of atherosclerosis
- Anti-inflammatory skin composition containing *Siegesbeckia glabrescens* Makino, and cell-transducing heat shock protein 27 fusion protein
- Anti-inflammatory skin composition containing *Caesalpinia sappan*, and cell-transducing heat shock protein 27 fusion protein
- COMPOSITION FOR INHIBITING DIABETES INDUCED COMPLICATION CONTAINING EXTRACTS FROM *Inula britannica* var. *japonica*
- PHARMACEUTICAL COMPOSITION COMPRISING EXTRACT OF *VIOLA TRICOLOR* FOR ALALGESIC
- 별PHARMACEUTICAL COMPOSITION COMPRISING EXTRACT OF *ASTER KORAIENSIS* FOR ALALGESIC
- PHARMACEUTICAL COMPOSITION COMPRISING EXTRACT OF AERIAL PARTS OF *PULSATILLA KOREANA* FOR ANALGESIC
- COMPOSITION FOR ALALGESIC COMPRISING AN EXTRACT OF *ARALIA CORDATA*
- COMPOSITION FOR ALALGESIC COMPRISING AN EXTRACT FROM ROOT OF *RUTA GRAVEOLENS*
- COMPOSITION FOR ALALGESIC COMPRISING AN EXTRACT OF *CAMPANULA PUNCTATA*
- COMPOSITION FOR ALALGESIC COMPRISING AN EXTRACT OF *DIANTHUS CHINENSIS* L.
- COMPOSITION FOR ALALGESIC COMPRISING AN EXTRACT OF *AGRIMONIA*
- ANTI-HELICOBACTER COMPOSITION CONTAINING *SCHIZANDRA SP* EXTRACT AND *RUBUS CAREABUS* EXTRACT
- COMPOSITION COMPRISING CORDYCEPIN AS SPECIAL COMPONENT OF *CORDYCEPS MILITARIS* FOR PREVENTING UVB-INDUCED SKIN INFLAMMATORY DISEASES
- A DRESSING MATERIALS CONTAINING WALLEYE POLLOCK GRAVY FOR KIMCHI AND KIMCHI MANUFACTURED USING THE SAME