Curriculum Vitae

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Educational history

1976 B.S., Shizuoka College of Pharmacy
1994 Ph.D., University of Shizuoka

Professional experience

1976-1987	Research Associate, Shizuoka College of Pharmacy
1987-2005	Research Associate, School of Pharmaceutical Sciences, University of Shizuoka
2005-2007	Assistant Professor, School of Pharmaceutical Sciences, University of Shizuoka
2007-present	Associate Professor, School of Pharmaceutical Sciences, University of Shizuoka

Membership

The Pharmaceutical Society of Japan, The Japanese Biochemical Society
Japan Society for Biomedical Gerontology, The Council for SAM Research
The Biomedical Society for Stress Response
The Japanese Society of Anti-Aging Medicine

Award and Honors

2009 Society of Tea Science (Japan), Young Researcher's Award
2010 The Japanese Society of Anti-Aging Medicine, Excellent Presentation

Major Research Interests

1. Mechanism of brain dysfunction with aging
2. Effect of psychosocial stress on brain function
3. Effect of glucose and lipid metabolism on brain aging
4. Prevention against brain dysfunction with aging

Selected Publications

Stable isotope dilution HILIC-MS/MS method for accurate quantification of glutamic acid, glutamine, pyroglutamic acid, GABA and theanine in mouse brain tissues.
Koichi Inoue, Miyazaki Y, **Keiko Unno**, Min JZ, Todoroki K, Toyo'oka T: *Biomed Chromatogr*. **30**, 55-61 (2016).

Green tea catechins for well-being and therapy: prospects and opportunities.
Noriyuki Miyoshi, Monira Pervin, Takuji Suzuki, **Keiko Unno**, Mamoru Isemura, Yoriyuki Nakamura: *Botanics: Targets and Therapy* **5**, 85-96 (2015).

Effects on aging and dementia.
Keiko Unno：Scientific Evidence for the Health Benefits of Green Tea, Japan Tea Central Public Interest Incorporated Association, pp.136-146 (2015).

Preventive Effect of Soybean on Brain Aging and Amyloid-β Accumulation: Comprehensive Analysis of Brain Gene Expression.
Keiko Unno and Tomokazu Konishi: *Recent Pat Food Nutr Agric*, **7,** 83-91 (2015).

Cognitive dysfunction and amyloid β accumulation are ameliorated by the ingestion of green soybean extract in aged mice.
Keiko Unno, Tomokazu Konishi, Aimi Nakagawa, Yoshie Narita, Fumiyo Takabayashi, Hitomi Okamura, Ayane Hara, Hiroyuki Yamamoto, Kazuaki Iguchi, Minoru Hoshino, Kensuke Yasui, Yuki Katayanagi, Ryuta Fukutomi, Shinjiro Imai: *Journal of Functional Foods*. **14**, 345-353 (2015).

Novel Frame-Shift Mutation in Slc5a2 Encoding SGLT2 in a Strain of Senescence-Accelerated Mouse SAMP10.
Keiko Unno, Hiroyuki Yamamoto, Masateru Toda, Shiori Hagiwara, Kazuaki Iguchi, Minoru Hoshino, Fumiyo Takabayashi, Sanae Hasegawa-Ishii, Atsuyoshi Shimada, Masanori: *Biochem Biophys Res Commn*. **454**, 89-94 (2014).

Anti-senescence effect.
Keiko Unno：～Health Benefits of Green Tea～ Navigation to Functional and Mechanistic Aspects 2014（Editor Mamoru Isemura）pp. 28-29 (2014)

Anti-stress effect of theanine on students during pharmacy practice: Positive correlation among salivary α-amylase activity, trait anxiety and subjective stress.
Keiko Unno, Naoki Tanida, Naoto Ishii, Hiroyuki Yamamoto, Kazuaki Iguchi, Minoru

Hoshino, Atsushi Takeda, Ozawa H, Tsutomu Ohkubo, Juneja LR, Hiroshi Yamada: *Pharmacol. Biochem. Behav.*, **111**, 128-135 (2013).

Protection of brain senescence by consumption of green tea components.
Keiko Unno, Toru Sasaki, Minoru Hoshino: *The Senescence-Accelerated Mouse (SAM): Achievements and Future Directions* (Ed by Toshio Takeda), Elsevier, pp. 509-522 (2013).

Ingestion of theanine, an amino acid in tea, suppresses psychosocial stress in mice.
Keiko Unno, Kazuaki Iguchi, Naoki Tanida, Keisuke Fujitani, Nina Takamori, Hiroyuki Yamamoto, Naoto Ishii, Hiroko Nagano, Takashi Nagashima, Ayane Hara, Kayoko Shimoi and Minoru Hoshino: *Exp. Physiol.*, **98**, 290-303 (2013).

Beta-cryptoxanthin, plentiful in Japanese mandarin orange, prevents Age-related cognitive dysfunction and oxidative damage in senescence-accelerated mouse brain.
Keiko Unno, Minoru Sugiura, Kazunori Ogawa, Fumiyo Takabayashi, Masateru Toda, Midori Sakuma, Ken-ichi Maeda, Keisuke Fujitani, Hideaki Miyazaki, Hiroyuki Yamamoto, Minoru Hoshino: *Biol. Pharm. Bull.*, **34**, 311-317 (2011).

Theanine intake improves the shortened lifespan, cognitive dysfunction and behavioral depression that are induced by chronic psychosocial stress in mice.
Keiko Unno, Keisuke Fujitani, Nina Takamori, Fumiyo Takabayashi, Ken-ichi Maeda, Hideaki Miyazaki, Naoki Tanida, Kazuaki Iguchi, Kayoko Shimoi, Minoru Hoshino: *Free Radical Res.*, **45**, 966-974 (2011).

Active component in green tea catechins and effective intake period for prevention of age-related brain dysfunction.
Keiko Unno, Hiroyuki Yamamoto, Toshiya Ohtaki, Yuichi Ishikawa, Shigenori Noda, Ken-ichi Maeda, Keisuke Fujitani, Hideaki Miyazaki, Fumiyo Takabayashi, Toru Sasaki, Minoru Hoshino: *Anti-Aging Med.,* **8**, 75-81 (2011).

Age-related increase of reactive oxygen generation in the brains of mammals and birds: Is reactive oxygen a signaling molecule to determine the aging process and life span?
Toru Sasaki, **Keiko Unno**, Shuichi Tahara, Takao Kaneko: *Geriatr. Gerontol. Int.,* **10** (Supple. 1), S10-S24 (2010).

Preventive effect of green tea catechins on experimental tumor metastasis in senescence-accelerated mice.
Kosuke Shimizu, Naomi Kinouchi Shimizu, Wakako Hakamada, **Keiko Unno**, Tomohiro Asai, Naoto Oku: Preventive effect of green tea catechins on experimental tumor metastasis in senescence-accelerated mice. *Biol. Pharm. Bull.*, **33**, 117-121 (2010).

Protection of brain and pancreas from high-fat diet: Effects of catechin and caffeine.
Keiko Unno, Hiroyuki Yamamoto, Ken-ichi Maeda, Fumiyo Takabayashi, Hirotoshi Yoshida, Naomi Kikunaga, Nina Takamori, Shunsuke Asahina, Kazuaki Iguchi, Kazutoshi Sayama, Minoru Hoshino: *Physiol. Behav.*, **96**: 262-269 (2009).

Inhibitory effect of relaxin-3 on insulin secretion in isolated pancreas and insulinoma.
Hiroyuki Yamamoto, Takeo Arai, Ryota Tasaka, Yasunori Mori, Kazuaki Iguchi, **Keiko**

Unno, Minoru Hoshino: *J. Health Science*, **55**: 132-137 (2009).

Daily ingestion of green tea catechins from adulthood suppressed brain dysfunction in aged mice.
Keiko Unno, Yuichi Ishikawa, Fumiyo Takabayashi, Toru Sasaki, Nina Takamori, Kazuaki Iguchi, Minoru Hoshino: *BioFactors*, **34**, 263-271 (2008).

Age-related increase of superoxide generation in the brains of mammals and birds.
Toru Sasaki, **Keiko Unno**, Shuichi Tahara, Atsuyoshi Shimada, Yoichi Chiba, Minoru Hoshino and Takao Kaneko: *Aging Cell*, **7**, 459-469 (2008).

Decline in glutathione peroxidase activity is a reason for brain senescence: consumption of green tea catechin prevents the decline in its activity and protein oxidative damage in ageing mouse brain.
Takahiro Kishido, **Keiko Unno**, Hirotoshi Yoshida, Daisuke Choba, Rie Fukutomi, Shunsuke Asahina, Kazuaki Iguchi, Naoto Oku, Minoru Hoshino: *Biogerontology*, **8**, 423-430 (2007).

Daily consumption of green tea catechin delays memory regression in aged mice.
Keiko Unno, Fumiyo Takabayashi, Hirotoshi Yoshida, Daisuke Choba, Rie Fukutomi, Naomi Kikunaga, Takahiro Kishido, Naoto Oku, Minoru Hoshino: *Biogerontology*, **8**, 89-95 (2007).

Social stress increases biopyrrins, oxidative metabolites of bilirubin, in mouse urine.
Tomoya Miyashita, Tokio Yamaguchi, Keiko Motoyama, **Keiko Unno**, Yumiko Nakano, Kayoko Shimoi: *Biochem. Biophys. Res. Commun.*, **349**, 775-780 (2006).

A deuterium-resistant algal cell line for D-labeling of heterotrophs expresses enhanced level of Hsp60 in D_2O medium.
Keiko Unno, Naoko Hagima, Takahiro Kishido, Shoji Okada, Naoto Oku: *Appl. Environ. Microbiol.*, **71**, 2256-2259 (2005).