

Sang Hwal Yoon

Nationality: Korea
Current Status: Post-doctoral fellow
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Education

2006	Ph.D. Biotechnology Gyeongsang National University, Jinju, Korea Dissertation title: Metabolic engineering of isopentenyl diphosphate synthesis pathway for isoprenoids production from <i>Escherichia coli</i>
2002	MS. Biotechnology Yeosu National University, Yeosu, Korea
1999	BS. Biotechnology Yeosu National University, Yeosu, Korea

Experience

8/15/2007	Post-doctoral fellow (Korea Research Fellowship)
–present	Department of Chemical Engineering, Massachusetts Institute of Technology, USA
2/1/2007	Post-doctoral research fellow (Brain Korea 21 fellowship)
–7/31/2007	Division of Applied Life Science, Gyeongsang National University, Korea
1/1/2006	Post-doctoral research fellow (KRF Young Researcher fellowship)
–1/31/2007	Environmental Biotechnology National Core Research Center, Gyeongsang National University, Korea

1/1/2004	Visiting Scholar
-1/31/2005	Hawaii Natural Energy Institute, School of Ocean and Earth Science and Technology, University of Hawaii at Manoa, USA
3/1/1999	Academic Assistant
-2/29/2000	Department of Biotechnology, Yeosu National University, Korea

▣ Publications

1. M.J. Kang, Y.M. Lee, **S.H. Yoon**, J.H. Kim, S.W. Ock, K.H. Jung, Y.C. Shin, Jay D. Keasling, and S.W. Kim, "Identification of genes affecting lycopene accumulation in *Escherichia coli* using a shot-gun method", *Biotechnology and Bioengineering*. 91(5), 636-642 (2005)
2. M.J. Kang, **S.H. Yoon**, Y.M. Lee, S.H. Lee, J.E. Kim, K.H. Jung, Y.C. Shin, and S.W. Kim, "Enhancement of lycopene production in *Escherichia coli* by optimization of lycopene synthetic pathway", *Journal of Microbiology and Biotechnology*, 15(4) 880-886 (2005)
3. **S.H. Yoon**, Cui Li, Y.M. Lee, S.H. Lee, S.H. Kim, M.S. Choi, W.T. Seo, J.K. Yang, J.Y. Kim, and S.W. Kim, "Production of Vanillin from Ferulic Acid Using Recombinant Strains of *Escherichia coli*", *Biotechnology and Bioprocess Engineering*, 10(4), 378-384 (2005)
4. **S.H. Yoon**, Cui Li, J.E. Kim, S.H. Lee, J.Y. Yoon, M.S. Choi, W.T. Seo, J.K. Yang, J.Y. Kim and S.W. Kim, "Production of vanillin by metabolically engineered *Escherichia coli*", *Biotechnology Letters*, 27(22): 1829-1832 (2005)
5. **S.H. Yoon**, M.S. Ko, K.A. Park, K.H. Jung, Y.C. Shin, Y.M. Lee, S.H. Lee, and S.W. Kim, "Enhanced lycopene production in recombinant *Escherichia coli* by random transposon and NTG mutagenesis", *Korean Journal of Biotechnology and Bioengineering*, 21(2):90-95 (2006)
6. **S.H. Yoon**, Y.M. Lee, J.E. Kim, K.H. Jung, Y.C. Shin, M.S. Choi, J.Y. Kim, Jay D. Keasling, and S.W. Kim, "Enhanced lycopene production in *Escherichia coli* engineered to synthesize isopentenyl diphosphate and dimethylallyl diphosphate from mevalonate.", *Biotechnology and Bioengineering*, 94(6): 1025-1032 (2006)
7. H.S. Zahiria, **S.H. Yoon**, Jay. D. Keasling, S.H. Lee, S.W. Kim, S.C. Yoon, and

- Y.C. Shin, "Coenzyme Q10 production in recombinant *Escherichia coli* strains engineered with a heterologous decaprenyl diphosphate synthase gene and foreign mevalonate pathway", *Metabolic Engineering*, 8(5): 406-416 (2006)
8. **S.H. Yoon**, J.E. Kim, S.H. Lee, H.M. Park, M.S. Choi, J.Y. Kim, S.H. Lee, Y.C. Shin, Jay D. Keasling, and S.W. Kim, "Engineering the lycopene synthetic pathway in *E. coli* by comparison of the carotenoid genes of *Pantoea agglomerans* and *Pantoea ananatis*.", *Applied Microbiology and Biotechnology*, 74(1): 131-139 (2007)
 9. **S.H. Yoon**, H.M. Park, J.E. Kim, S.H. Lee, M.S. Choi, J.Y. Kim, D.K. Oh, J.D. Keasling, and S.W. Kim, "Increased β -carotene production in recombinant *E. coli* harboring an engineered isoprenoid precursor pathway with mevalonate addition", *Biotechnology Progress*, 23(3): 599-605 (2007)
 10. **S.H. Yoon**, E.G. Lee, A. Das, S.H. Lee, C. Li, M.S. Choi, W.T. Seo, and S.W. Kim, "Enhanced vanillin production from recombinant *E. coli* using NTP mutagenesis and adsorbent resin", *Biotechnology Progress*, In press (2007)
 11. A. Das, **S.H. Yoon**, S.H. Lee, D.K. Oh, and S.W. Kim, "An update on microbial carotenoid production: application of recent metabolic engineering tools", *Applied Microbiology and Biotechnology*, In press (2007)

□ Patent

1. Method for screening a substance capable of inhibiting either or both of the mevalonate pathway and nonmevalonate pathway using a host cell transformed with a DNA encoding all enzymes associated with a foreign mevalonate pathway and having an inactivated indigenous nonmevalonate pathway (Korea Patent Application No. 04-90123, Application date: 2004-11-06)
2. Process for preparing isoprenoid through mevalonate pathway (Korea Patent Application No. 10-2006-0034771, Application date: 2006-04-18)

□ Book Chapter

1. G.Y. Wang, Q.Z. Li, and **S.H. Yoon**. 2007. Biodiversity and biotechnological potentials of fungi from the marine environment. In: Rai, M. and S. K. Deshmukh (eds). *Mycotechnology: Current trends and future prospects*. I. K. International

Publishing House Pvt. Ltd., New Delhi. Pages 215-225.

Skills

1. DNA, RNA and Protein works (cloning, purification and analysis)
2. Mutagenesis
3. Construction of various libraries
4. Real-Time PCR
5. Analytical instrumentations including HPLC, GC, etc.
6. Cultivation of various microorganism and animal cell