

İ. Halil Kavakli

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Education

1994-December, 2000 Washington State University, Genetics and Cell Biology, MS and Ph.D. (WASHINGTON, USA)

1988-1994 Middle East Technical University, Dept. of Biology, BS and MS (not completed) (Ankara, TURKEY)

Academics

- Chairman of the Department Molecular Biology and Genetics, Koç Univ (2012-present)
- Member of the Academic Council College of Science, Koç Univ (2012-present)
- Professor of Chemical and Biological Engineering, Koç Univ. Istanbul Turkey, (2016-present)
- Associate Professor of Chemical and Biological Engineering, Koç Univ. Istanbul Turkey, (2011-2016)
- Visiting Associate Professor Department of Pharmacology at University of Pennsylvania, Philadelphia, USA (2011-2012)
- Assist. Prof. Koç University, Chemical and Biological Eng., Istanbul Turkey, (September 2004-2011)
- Postdoctoral Research Associate University of North Carolina-Chapel Hill, Biochemistry and Biophysics (with Prof. Aziz Sancar), Chapel Hill North Carolina USA (Jan 2001-Aug 2004)
- Teaching assistant at Washington State University in School of Molecular Biosciences, Pullman Washington USA (1999)
- Research assistant at Washington State University in Institute of Biological Chemistry, Pullman Washington USA (Jan 1995-Dec 2000)
- Teaching and Research Assistant at Middle East Technical University in Dept. of Biology, Ankara Turkey (1994-1995)

Awards

- Feyzi Akkaya Research Fund for Scientific Activities (FABED) Outstanding Achievement Award for Young Scientists 2008
- Turkish Academy of Sciences (TÜBA) “Distinguished Young Scholar Award” (GEBİP) (2006)

- Young Investigator Career Award, TÜBİTAK (The Scientific and Technical Research Council of Turkey), 2005 Turkey
- Travel award, School of Molecular Biosciences, Washington State University, 2000
- R.A. Nilan travel award from Genetics and Cell Biology, WSU 2000
- Registration grant from Graduate Student Association, WSU 2000
- Travel grant from graduate school, Washington State University 2000
- Graduate/Postdoctoral Travel Award from American Society of Molecular Biology and Biochemistry 1999
- Loyal H Davis Fellowship, Washington State University, 1998

Professional Activities

Panel Member for Turkish Scientific Council (TUBITAK)

Panel Member for Turkish Ministry of Industry (SANTEZ)

Panel Member of Turkish Ministry of Industry TGSD

Referee for various journals (Plant Cell Reports, Canadian J Microbiology, Turkish J of Biol, Plant Physiol, Turkish J of Agriculture, Current Drug Dev, Biosen and Bioelec, PLOS one, Photochem and Photo Biol, Protein and Peptide Letters, BioMed Research International, BMC Genomics, International Journal of Plant Genomics, Plant Science, PLOS Comp Biol, Journal of Advances in Biology & Biotechnology, Applied Computing and Informatics, Plant Biotechnology Journal, Functional & Integrative Genomics, Biotechnology for Biofuels, Dataset, Journal of Applied Phycology, Database (Oxford), Extremophiles, 3Biotech. Peer Journal, eLife, Plant Signaling and Behavior, Fuel, Molecular Biology and Evolution, Heliyon, Genome, BMC Plant Biology, Journal of Biomolecular Structure and Dynamics, Journal of Tropical Biodiversity and Biotechnology, 3Biotech **2020** Plos One, Nature and Science of Sleep, Journal of Photochemistry & Photobiology, B: Biology, Tree Physiology, Journal of Biomolecular Structure and Dynamics, Future Microbiology, Frontiers in Nutrition, Photochemistry and Photobiology, Molecular Genetics and Genomics, FEBS Journal, Plant Cell, Tissue and Organ Culture, **2021** Plos One, Plant Molecular Biology, FIGE, Applied Microbiology and Biotechnology)

Referee for Turkish Academy of Science

Session chair of various conferences

Scientific Committee Member of 3rd International Congress of the Molecular Biology Association of Turkey

External reviewer Inserm France - Plan Cancer

External reviewer-National Science Center of Poland.

Member of the 10th National Chemical Engineering Conference secretariat

Scientific Committee Member of 1st National Plant Physiology Congress (2015), Ataturk University

Chair of the International conference on Algae, Koç University 2015

Conference Chair International Conference on Biofuel production from Algae, Koç University, Istanbul Turkey

Scientific Committee Member of 2nd National Plant Physiology Congress (2016), Mersin University

Scientific Committee Member of 4th International Bioengineering Conference (2016), Istanbul, Turkey

Session establishment in The Federation of European Pharmacological Societies (EPHAR) 2016 on chronobiology (2016), Istanbul Turkey

Guest Editor in Frontiers in Plant Science in research topic of the **Understanding Carbohydrate Metabolism for the Improvement Plant Yield**

Book Co-Editor

Genetic Diversity (InTech Publisher)

Carbohydrate (InTech Publisher)

Research

- Our group has discovered several cryptochromes (blue-light photoreceptors) in microorganisms (*V. cholerae* and *C.morelae*). We are taking both genomics and knock-out approaches to identify the roles of the cryptochrome in microorganisms in response to the blue-light. We also use genomic approach to understand their response to blue-light response
- Our group is also developed a highthroughput method to discover new transcription factors that act as new core clock component and/or clock modifiers that provide link between clock and other signal transduction pathway. To this end we identified several proteins might have such functions currently we are characterizing the role of these transcription factor in clock.
- Our group is also interested in discovering small molecules that regulate clock period length and amplitudes. To this end we have discovered several small molecules that bind both CRY, CLOCK and BMAL1 using structure-based drug design methods. We are currently characterizing these drugs using both experimental and computational approaches.
- 1000 genome project revealed that clock genes are highly polymorphic our group also investigating the role of these SNP at the molecular level using luciferase method. We have seen that some of these mutations affect interactions between core clock components. Currently we are studying on the physiological effect of the SNPs at the cellular levels.

Publications

1. Akgul R, Morgil H, Kizilkaya IT, Sarayloo E, Cevahir G, Akgul F, **Kavakli IH** (2022) Transcriptomic and fatty acid analyses of *Neochloris aquatica* grown under different nitrogen concentration. **Funct Integr Genomics** 22:407-421.
2. **Kavakli IH**, Ozturk N, Baris I (2022) Protein interaction networks of the mammalian core clock proteins. **Adv Protein Chem Struct Biol** 131:1-19.
3. **Kavakli IH**, Gul S, Turkay M (2022) Identification of novel small molecules targeting core clock proteins to regulate circadian rhythm. **Curr Opin Chem Eng** 35:100730.
4. Gul S, **Kavakli IH** (2022) The Structure-Based Molecular-Docking Screen Against Core Clock Proteins to Identify Small Molecules to Modulate the Circadian Clock. In: Solanas G, Welz PS (eds) **Circadian Regulation: Methods and Protocols**. Springer US New York, NY, pp. 15-34.
5. Gul H, Selvi S, Yilmaz F, Ozcelik G, Olfaz-Aslan S, Yazan S, Tiryaki B, Gul S, Yurtseven A, **Kavakli IH**, Ozlu N, Ozturk N (2022) Proteome analysis of the circadian clock protein PERIOD2. **Proteins** 90:1315-1330.

6. Gul S, Rahim F, Isin S, Yilmaz F, Ozturk N, Turkay M, Kavakli IH (2021) Structure-based design and classifications of small molecules regulating the circadian rhythm period. *Scientific Reports* 11:18510.
7. Karatum O, Aria MM, Eren GO, Yildiz E, Melikov R, Srivastava SB, Surme S, Dogru IB, Bahmani Jalali H, Ulgut B, Sahin A, **Kavakli IH**, Nizamoglu S (2021) Nanoengineering InP Quantum Dot-Based Photoactive Biointerfaces for Optical Control of Neurons. **Front Neurosci** 15:652608.
8. Cal-Kayitmazbatir, S., Kulkoyluoglu-Cotul, E., Growe, J., Selby, C.P., Rhoades, S.D., Malik, D., Oner, H., Asimgil, H., Francey, L.J., Sancar, A., Kuruger, W.D. Hogenesch, J.B. Welji, A. Anafi, R.C. and Kavakli, I.H. (2021). CRY1-CBS binding regulates circadian clock function and metabolism. **FEBS J** 288, 614-639.
9. Emisoglu-Kulahli, H., Gul, S., Morgil, H., Ozcan, O., Aygenli, F., Selvi, S., Kavakli, I.H., and Ozturk, N. (2021). Transcriptome analysis of the circadian clock gene BMAL1 deletion with opposite carcinogenic effects. **Funct Integr Genomics** 21, 1-16.
10. Gul, S., Aydin, C., Ozcan, O., Gurkan, B., Surme, S., Baris, I., and Kavakli, I.H. (2020). The Arg-293 of Cryptochrome1 is responsible for the allosteric regulation of CLOCK-CRY1 binding in circadian rhythm. **J Biol Chem** 295, 17187-17199.
11. Gul, S., Ozcan, O., Asar, S., Okyar, A., Baris, I., and Kavakli, I.H. (2020). In silico identification of widely used and well-tolerated drugs as potential SARS-CoV-2 3C-like protease and viral RNA-dependent RNA polymerase inhibitors for direct use in clinical trials. **J Biomol Struct Dyn**, 1-20.
12. Han, M., Srivastava, S.B., Yildiz, E., Melikov, R., Surme, S., Dogru-Yuksel, I.B., Kavakli, I.H., Sahin, A., and Nizamoglu, S. (2020). Organic Photovoltaic Pseudocapacitors for Neurostimulation. **ACS Appl Mater Interfaces** 12, 42997-43008.
13. Melikov, R., Srivastava, S.B., Karatum, O., Dogru-Yuksel, I.B., Bahmani Jalali, H., Sadeghi, S., Dikbas, U.M., Ulgut, B., Kavakli, I.H., Cetin, A.E., and Nizamoglu S (2020). Plasmon-Coupled Photocapacitor Neuromodulators. **ACS Appl Mater Interfaces** 12, 35940-35949.
14. Melikov, R., Srivastava, S.B., Karatum, O., Dogru-Yuksel, I.B., Dikbas, U.M., Kavakli, I.H., and Nizamoglu, S. (2020). Bidirectional optical neuromodulation using capacitive charge-transfer. **Biomed Opt Express** 11, 6068-6077.
15. Onat OE, Kars ME, Gül Ş, Bilguvar K, Wu Y, Özhan A, Aydın C, Başak AN, Trusso MA, Goracci A, Fallerini C, Renieri A, Casanova JL, Itan Y, Atbaşoğlu CE, Saka MC, Kavaklı IH, Özçelik T. (2020) Human CRY1 variants associate with attention deficit/hyperactivity disorder. **J Clin Invest.** 2020 Jul 1;130(7):3885-3900.
16. Akkaya NE, Ergun C, Saygun A, Yesilcubuk N, Akel-Sadoglu N, Kavakli IH, Turkmen HS, Catalgil-Giz H. (2020). New biocompatible antibacterial wound dressing candidates; agar-locust bean gum and agar-salep films. **Int J Biol Macromol.** 2020 Mar 27. pii: S0141-8130(20)32800-2.

17. Doruk YU, Yarparvar D, Akyel YK, Gul S, Taskin AC, Yilmaz F, Baris I, Ozturk N, Turkey M, Ozturk N, Okyar A, Kavakli IH. (2020) A CLOCK-binding small molecule disrupts the interaction between CLOCK and BMAL1 and enhances circadian rhythm amplitude. *J Biol Chem.* 295(11):3518-3531.
18. Muratcioglu S, Aydin C, Odabasi E, Ozdemir ES, Firat Karalar EN, Jang H, Tsai CJ, Nussinov R, **Kavakli IH**, Gursoy A, Keskin O. (2020). Oncogenic K-Ras4B Dimerization Enhances Downstream Mitogen-activated Protein Kinase Signaling. *J Mol Biol.* 2020 Feb 14;432(4):1199-1215.
19. Dikbas UM, Tardu M, Canturk A, Gul S, Ozcelik G, Baris I, Ozturk N, **Kavakli IH**. (2019) Identification and Characterization of a New Class of (6-4) Photolyase from *Vibrio cholerae*. *Biochemistry.* 29;58(43):4352-4360.
20. Cavga AD, Tardu M, Korkmaz T, Keskin O, Ozturk N, Gursoy A, Kavakli IH. (2019). Cryptochrome deletion in p53 mutant mice enhances apoptotic and anti-tumorigenic responses to UV damage at the transcriptome level. *Funct Integr Genomics.* 19(5):729-742.
21. Morgil H, Tardu M, Cevahir G, Kavakli IH. (2019). Comparative RNA-seq analysis of the drought-sensitive lentil (*Lens culinaris*) root and leaf under short- and long-term water deficits. *Funct Integr Genomics.* 19(5):715-727.
22. Bahmani Jalali H, Karatum O, Melikov R, Dikbas UM, Sadeghi S, Yildiz E, Dogru IB, Ozgun Eren G, Ergun C, Sahin A, Kavakli IH, Nizamoglu S.(2019). Biocompatible Quantum Funnel for Neural Photostimulation. *Nano Lett.* 2019 Sep 11;19(9):5975-5981
23. Kavakli IH, Ozturk N and Gul S (2019). DNA repair by photolyases. *Adv Protein Chem Struct Biol.* 115:1-19.
24. Odabasi E, Gul S, Kavakli IH, and Firat-Karalar EN (2019). Centriolar satellites are required for efficient ciliogenesis and ciliary content regulation. *EMBO Reports*, 20(6):e47723
25. Bahmani JH, Mohammadi AM, Dikbas UM, Sadeghi S, Ganesh KB, Sahin M Kavakli IH, Ow-Yang CW and Nizamoglu (2018) Effective Neural Photostimulation Using Indium-Based Type-II Quantum Dots. *ACS Nano*, 12(8):8104-8114.
26. Sarayloo E, Simsek S, Unlu YS, Cevahir G, Erkey E, and Kavakli IH (2018) Enhancement of the lipid productivity and fatty acid methyl ester profile of *Chlorella vulgaris* by two rounds of mutagenesis. *Bioresource Technology*, 250:764-769
27. Caniaz RO, Simsek S, Arca S, Sarayloo E, Kavakli IH, and Erkey C (2018) Upgrading blends of microalgae feedstocks and heavy oils in supercritical water. *The Journal of Supercritical Fluids*, 133(2): 674-682
28. Sarayloo E, Tardu M, Unlu YS, Simsek S, Cevahir G, Erkey E, and Kavakli IH (2017) Understanding lipid metabolism in high-lipid-producing *Chlorella vulgaris* mutants at the genome-wide level. *Algal Research*, 28, 244-252

29. Ozturk N, Ozturk D, Kavakli IH, and Okyar A (2017) Molecular aspects of circadian pharmacology and relevance for cancer chronotherapy. **International Journal of Molecular Sciences**, 18 (10), 2168
30. Krishnaiah SY, Wu G, Altman BJ, Growe J, Rhoades SD, Coldren F, Venkataraman A, Olarerin-George AO, Francey LJ, Mukherjee S, Girish S, Selby CP, Sibel Cal, Ubeydullah ER, Bahareh Sianati, Sengupta A, Anafi RC, Kavakli IH, Sancar A, Baur AJ, Dang CV, Hogenesch JB, Weljie AM (2017) Clock Regulation of Metabolites Reveals Coupling between Transcription and Metabolism. **Cell Metabolism**, 25(4):961–974
31. Kavakli IH, Baris I, Tardu M, Gul S, Oner H, Cal S, Bulut S, Yarpurvar D, Berkel C, Ustaoglu P, Aydın C (2017) The photolyase/cryptochrome family of proteins as DNA repair enzymes and transcriptional repressors. **Photochemistry and Photobiology**, **93:93-103**
32. Tardu M, Bulut S, Kavakli IH (2017) MerR and ChrR mediate blue light induced photo-oxidative stress response at the transcriptional level in *Vibrio cholerae*. **Scientific Reports** 7:40817
33. Tardu M, Dikbas UM, Baris I, and Kavakli IH (2016) RNA-seq analysis of the transcriptional response to blue and red light in the extremophilic red alga, *Cyanidioschyzon merolae*. **Funct Integr Genomics** 16(6):657-669
34. Seferoglu AB, Gul S, Dikbas UM, Baris I, Koper K, Caliskan M, Cevahir G, Kavakli IH. (2016) Glu-370 in the Large Subunit Influences the Substrate Binding, Allosteric, and Heat Stability Properties of Potato ADP-glucose Pyrophosphorylase. **Plant Science**, 252: 125-32
35. Akdoğan E, Tardu M, Garipler G, Baytek G, Kavakli IH, Dunn CD (2016) Reduced Glucose Sensation Can Increase the Fitness of *Saccharomyces cerevisiae* Lacking Mitochondrial DNA. **Plos One**, 11(1):e0146511
36. Tardu, M., F. Rahim, I.H. Kavakli and M. Turkay (2016) MILP-Hyperbox Classification for Structure-Based Design in the Discovery of Small Molecule Inhibitors of Sirtuin6, **RAIRO-OR**, 50(2), 387-400
37. Cakmak O, Ermek E, Kilinc N, Bulut B, Baris I, Kavakli IH, Yarlioglu G, and Urey H (2015). Cartridge Based Sensor Array Platform for Multiple Coagulation Measurements from Plasma. **Lab on a Chip**, 15(1):113-20
38. Seferoglu AB, Koper K, Can FB, Cevahir G, and Kavakli IH (2014) Enhanced Heterotetrameric Assembly of Potato ADP-glucose Pyrophosphorylase Using Reverse Genetics. **Plant Cell and Physiology**, 55(8):1473-1483
39. Anafi RC, Lee Y, Sato TK, Venkataraman A, Ramanathan C, Kavakli IH, Hughes ME, Baggs J, Growe JP, Liu AC, Kim J, and Hogenesch JB (2014) Machine learning helps identify CHRONO as a circadian clock component. **Plos Biology**, 12(4):e1001840.
40. Pellegrino R*; Kavakli IH*; Goel N.; Cardinale CJ; Dinges DF; Kuna ST; Maislin G; Dongen HP; Tufik S; Hogenesch JB; Hakonarson H; Pack AI (2014) A Novel BHLHE41 Variant is Associated with Short Sleep and Resistance to Sleep Deprivation in Humans. **Sleep**, 37 (8):1327-1336

***equally contributed first author**

41. Lahens NF, Kavakli IH, Zhang R, Hayer K, Black M, Dueck H, Pizarro A, Kim J, Irizarry RA, Thomas RS, Grant GR, Hogenesch JB (2014) IVT-seq reveals extreme bias in RNA-sequencing. **Genome Biology**, 15:R86 doi:10.1186/gb-2014-15-6-r86
42. Cakmak O, Elbuken C, Ermek E, Mostafazadeh A, Baris I, Erdem Alaca B, Kavakli IH, Urey H (2013) Microcantilever based disposable viscosity sensor for serum and blood plasma measurements. **Methods**, 63(3):225-32.
43. Seferoglu B, Baris I, Morgil H, Tulum I, Ozdas S, Cevahir G, Kavakli IH (2013) Transcriptional regulation of the ADP-Glucose pyrophosphorylase isoforms in the leaf and the stem under long and short photoperiod in lentil. **Plant Science**, 205-206:29-37
44. Azizoglu S, Kizilel R, Marusic M, Kavakli IH, Erman B, and Kizilel S (2013) Computational and Experimental Investigation of DNA Repair Protein Photolyase Interactions with Low Molecular Weight Drugs, **Journal of Molecular Recognition**, 26(7):297-30
45. Asimgil H and Kavakli IH (2012) Purification and Characterization of five Members of Photolyase/Cryptochrome Family from *Cyanidioschyzon merolae*. **Plant Science**, 185-186:190-198
46. Cakir B, Dagliyan O, Dagyildiz E, Baris I, Kavakli IH, Kizilel S, Turkay M (2012). Structure Based Discovery of Small Molecules to Regulate the Activity of Human Insulin Degrading Enzyme, **PLoS One**, 7(2):e31787.
47. Kizilel R, Demir E, Azizoglu S, Asimgil H, Kavakli IH, and Kizilel S (2012) Investigation of Real-Time Photorepair Activity on DNA via Surface Plasmon Resonance. **PLoS One**, 7(8): e44392.
48. Dagliyan O, Uney-Yuksektepe F, Kavakli IH, and Turkay M (2011) Optimization based tumor classification from microarray gene expression data. **PLOS One**, 6(2):e14579.
49. Timurdogan E, Alaca BE, Kavakli IH, and Urey H (2011) MEMS biosensor for detection of Hepatitis A and C viruses in serum. **Biosensor and Bioelectronics**, Vol.:28 (1), Pages:189-94.
50. Timurdogan E, Ozber N, Nargul S, Yavuz S, Kilic MS, Kavakli IH, Urey H, Alaca BE (2010) Detection of human kappa-opioid antibody using microresonators with integrated optical readout. **Biosensor and Bioelectronics**, 26:195-201.
51. Ozber N, Baris I, Tatlici G, Gur I, Kilinc S, Unal EB, and Kavakli IH (2010) Identification of two amino acids in the C-terminal Domain of mouse CRY2 essential for PER2 interaction. **BMC Molecular Biology**, 11:69
52. Armutlu P, Ozdemir, ME, Ozdas S, Kavakli IH and Turkay M. (2009) Discovery of novel CYP17 inhibitors for the treatment of prostate cancer with structure-based drug design. **Letters in Drug Design and Discovery**, 6(8):337-344

53. Dagliyan O, Kavakli IH, Turkey M. (2009) Classification of Cytochrome P450 Inhibitors with respect to binding free energy and pIC50 using common molecular descriptors. **Journal of Chemical Information and Modeling**, 49(10):2403-11.
54. Baris I, Tuncel A, Ozber N, Keskin O, and Kavakli IH (2009) Investigation of the interaction between the large and small subunits of potato ADP-glucose pyrophosphorylase. **PLOS Computational Biology**, 5(10):e1000546.
55. Tuncel A, Kavakli IH, and Keskin O (2008) Insights into subunit interactions in the Heterotetrameric Structure of Potato ADP-glucose Pyrophosphorylase. **Biophysical Journal**, 95:3628-3639
56. Ozturk N, Kao Y-T, Selby CP, Kavakli IH, Partch CL Zong D, and Sancar A (2008) Purification and Characterization of a Type III Photolyase from *Caulobacter crescentus*. **Biochemistry** 47:10255-10261
57. Ozturk A, Ocakli I, Ozber N, Urey H, Kavakli IH, Alaca E (2008) A magnetically actuated resonator mass sensor with integrated optical readout. **IEEE Photonics Technology Letters**, 20:1905-1908
58. Armutlu P, Ozdemir ME, Uney-Yuksektepe F, Kavakli IH, and Turkey M (2008) Classification of drug molecules considering their IC50 values using mixed-integer linear programming based hyper-boxes method. **BMC Bioinformatics**, 9:411
59. Obana Y, Omoto D, Kato C, Matsumoto K, Nagai Y, Kavakli IH, Hamada S, G. Edwards, Okita TW, Matsui H and H. Ito (2006) Enhanced turnover of transitory starch by expression of up-regulated ADP-glucose pyrophosphorylases in *Arabidopsis thaliana*. **Plant Science**, 170 (1) 1-11.
60. Chaitanya Saxena, Wang H, Kavakli IH, Sancar A, and Zhong D(2005) Ultrafast Dynamics of Resonance Energy Transfer in Cryptochrome. **Journal of American Chemical Society**, 127(22):7984-7985
61. Hwang S-K, Salamone PR, Kavakli H, Slattery CJ, and Okita TW (2004) Rapid purification of the potato ADP-glucose pyrophosphorylase by polyhistidine-mediated chromatography. **Protein Expression and Purification**, 38(1): 99-107
62. Kavaklı IH and Sancar A (2004) Analysis of the role of intraprotein electron transfer in photoreactivation by DNA photolyase in vivo. **Biochemistry** 43(48):15103-15110
63. Worthington NE*, Kavakli IH*, Berrocal-Tito G, Bondo BE, and Sancar A (2003) Purification and characterization of three members of the photolyase/cryptochrome family blue-light photoreceptors from *Vibrio cholerae*. **Journal of Biological Chemistry**, 278(40):39143-54
 *=equal contribution
64. Kavakli IH, Kato C, Sang-Bong C, Kim K-H, Salamone PR, Hiroyuki I, and Okita TW (2002) Generation, characterization, and heterologous expression of wild-type and up-

- regulated forms of *Arabidopsis thaliana* leaf ADP-glucose pyrophosphorylase. **Planta**, 215(3):430-439.
65. Salamone PR, Kavakli IH, Slattery CJ, and Okita TW (2002) Directed Evolution of ADP-glucose pyrophosphorylase. **Proc. Natl. Acad. Sci. USA**, 99 (2):1070-1075.
 66. Choi S-B, Kim KH, Kavakli IH, Lee SK, and Okita TW (2001) Transcriptional expression characteristics and subcellular localization of ADP-glucose pyrophosphorylase in the oil plant *Perilla frutescens*. **Plant Cell and Physiology** 42(2):146-153.
 67. Kavakli IH, Salamone PR, Greene TW, and Okita TW (2001) Investigation of subunit function in ADP-glucose pyrophosphorylase. **Biochemical and Biophysical Research Communication**, 281(3): 783-787.
 68. Sikka VK, Choi S-B, Kavakli IH, Gupta S, Ito H, and Okita TW (2001) Subcellular compartmentation and allosteric regulation of the rice endosperm ADP-glucose pyrophosphorylase. **Plant Science**, 161 (3) 461-468.
 69. Kavakli IH, Park J-S, Salamone PR, Slattery CJ, and Okita TW (2001) Analysis of allosteric effector binding sites of potato ADP-glucose pyrophosphorylase through reverse genetics. **Journal of Biological Chemistry**, 276 (44):40834-40840.
 70. Kavakli IH, Slattery CJ, Ito H, and Okita TW (2000) The conversion of carbon and nitrogen into starch and storage proteins in developing storage organs: an overview. **Australian J of Plant Physiol**, 27(6):561-570.
 71. Slattery CJ, Kavakli IH, Okita TW (2000) Engineering starch for increased quantity and quality. **Trends in Plant Science**, 5(7):291-298.
 72. Salamone PR, Greene TW, Kavakli IH, and Okita TW (2000) Isolation and characterization of a higher plant ADP-glucose pyrophosphorylase small subunit homotetramer. **FEBS Letter**, 482:113-118.
 73. Green TW, Kavakli IH, Kahn M, and Okita TW (1998) Generation of up-regulated allosteric variants of potato ADP-glucose pyrophosphorylase by reversion genetics. **Proc. Natl. Acad. Sci. USA**, 95:10322-10327.
 74. Gaieva RA, Allahverdiev SR, Guseinova NB, Kavakli IH, and Saeedeh (1998) Effect of salt stress and synthetic hormone polystimuline K on the photosynthetic activity of cotton (*Gossypium hirsutum*). **Tr. J. of Botany**, 22:217-221
 75. Kavakli IH, Wu Y, and Okita TW (1996) DNA Sequences of near-full length cDNA encoding the ADP-glucose pyrophosphorylase large subunit from (*Oryza sativa* L) endosperm. **Plant Physiol**, 112: 1399
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Teaching

Since I was the first molecular biologist at Koç University, I was responsible from biological sciences and engineering in the college of engineering. At the same time I involved designing

Molecular Biology and Genetics Department undergraduate and graduate curriculum. Teaching load is 4 semester courses per year (offered 6 different courses while at Koç University).

Recently taught undergraduate courses:

- MBGE 101: General Biology I (Fall 2008)
- MBGE 102: General Biology II (Spring 2008)
- ChBi 300: Biochemistry (Fall-2005,2006,2007,2008,2009,2010,2012,2013,2014, 2015,2016,2017)
- ChBi310/MBGE303 Biochemistry II (Fall-2006, 2011,2013,2014, 2014, 2015,2016,2017)
- Biol 200 General Biology for Engineering Students (Fall-2004,2005,2007; Spring 2004,2006,2008)

Graduate level regular courses

- ChBi 510: Industrial Microbiology (Spring-2007,2008,2010,2012,2013, 2014, 2015,2016,2017)
- ChBi 516: Biotechnology (Fall-2007,2008,2009, Spring-2008, 2011,2013)
- ChBi 524 Molecular Chronobiology (Spring 2020)

Externally Funded Projects

A. Completed Projects

1-Title: Isolation and characterization of starch biosynthetic cDNA genes from lentil (*Lens culinaris* Medic.) (Principal Investigator)
Funding Agency: TUBITAK-TOVAG
Amount: \$110,000
Duration: June 2005 - June 2008

2-Title: A search about oxalic acid metabolism by using enzymatic, immunologic and molecular genetic methods (Investigator)
Funding Agency: TUBITAK-TBAG
Amount: \$70,000
Duration: June 2005 - June 2008

3-Title: Identification of interacting domain of mammalian cryptochrome with clock proteins, BMAL, PERIOD, and CLOCK (Principal Investigator)
Funding Agency: FP6-2004-Mobility-12
Amount: €80,000
Duration: June 2006 - June 2008

4-Title: Development of Biosensor to detect drug from blood
Funding Agency: TÜBİTAK-EEEAG
Amount: 300.000,00 \$
Duration: June 2006 - June 2009

5-Title: Structure-Function of Mammalian Cryptochrome (Principal Investigator)
Funding Agency: TUBITAK-TBAG
Amount: 20,000 \$
Duration: November 2008-November 2009

- 6-Title: Identification of Light Dependent substrate of *V.cholerae* Cryptochrome (Principal Investigator)
Funding Agency: TÜBİTAK-TBAG
Amount: 120,000 US Dollar
Duration: June 2006 - June 2009
- 7-Title: Structure-Function relationship of ADPglucose pyrophosphorylase(Co-Principal Investigator)
Funding Agency: Istanbul University Scientific Funding Agency
Amount: 50,000.00 US dollar
Duration: May 2009- May2011
- 8-Title: Modeling the 3D structure of hetrotetrameric of potato ADP-glucose pyrophosphorylase enzyme and identification of critical amino acids of large subunit that participate interaction with subunit (Principal Investigator)
Funding Agency: TUBITAK-TBAG
Amount: 15, 000 US Dollar
Duration: August 2009- August 2009
- 10-Title: Hastane ve toplum kaynaklı GSBL yapan *E.coli* ve *Klebsiella sp.* kökenlerinin prevalansı, direnç profilleri, fekal taşıyıcılığı, epidemiyolojik ve moleküler karakterizasyonu
Funding Agency: Istanbul University Scientific Funding Agency
Amount: 16,000 US Dollar
Duration: August 2009- August 2011
- 11- Obtaining stable hetrotetrameric forms of ADP-glucose pyrophosphorylase through Reversion genetics (Principal Investigator)
Funding Agency: TUBITAK-TBAG
Amount: 15,000 US Dollar
Duration: August 2010- August 2011
- 12-Investigation of Protein-protein Interactions between Clock Proteins Using Surface Plasmon Resonance (Co-Principal Investigator)
Funding Agency: TUBITAK-TBAG
Amount: 150,000 US Dollar
Duration: August 2010- August 2013
- 13-Koc University Surface Science and Technology Center (Investigator)
Funding Agency: State Planning of Agency
Amount: 10 million US Dollar
Duration: April 2010- April 2013
- 14- Optical MEMS-based High Performance Bio Sensor Array (Co-Principal Investigator)
Funding Agency: TUBITAK-EEAG
Amount: 190, 000.00 US Dollar
Duration: May 2010- May 2013
- 15-Isolation and characterization of the photolyase/cryptochrome gene family from the *C. merolae 10D* (Principal Investigator)
Funding Agency: TUBITAK-TBAG
Amount: 115,000.00 US Dollar
Duration: June 2011- June 2014
- 16- Identification of BMAL1-CLOCK modifiers through high throughput screening using Lusiferase Assay

Funding Agency: TUBITAK-TBAG
Amount: 200,000.00 US Dollar
Duration: November 2012- October 2015

17- Funding Agency: Experimental Investigation of Computationally Identified Cryptochrome
Regulating Drug Candidate Molecules on Biological Clock (my PhD student is a PI)
Funding Agency: TUBITAK-KBAG
Amount: 15, 000.00 US Dollar
Duration: June 2014- June2015

18-Identification of organic molecules that regulates BML1-CLOCK interaction (Principal
Investigator)
Funding Agency: TUBITAK-KBAG
Amount: 30, 000.00 US Dollar
Duration: October 2014- October 2015

19- Renewable Energy from micro-algae (Principal Investigator)
Funding Agency: Istanbul Development Agency (ISTKA)
Amount: 500,000.00 US Dollar
Duration: September 2014- October 2015

B. Current

1- Detection of blood coagulation from a drop of blood (investigator)
Funding Agency: TÜBİTAK
Amount: 500,000.00 US Dollar
Duration: September 2013- October 2016

2- Genome Wide RNA-Seq
Funding Agency: NIH-R01
Amount: 2500,000.00 US Dollar
Duration: September 2014- October 2017

3- Molecular Analyses of the Effects of Clock Gene SNPs on the Biological Clock (Principal
Investigator)
Funding Agency: TÜBİTAK
Amount: 100,000.00 US Dollar
Duration: May 2015- April 2017

4- Identification of New Genes Involved in Mammalian Circadian Clock(Principal
Investigator)
Funding Agency: TÜBİTAK
Amount: 100,000.00 US Dollar
Duration: May 2016- April 2019

5- Identification small molecules, cryptochrome destabilizer, in cancer treatment (Principal
Investigator)

Funding Agency: TÜBİTAK
Amount: 350,000 US Dollar
Duration: May 2016- April 2019

5- Identification small molecules interferes with CRY-PER interaction (Principal Investigator)

Funding Agency: TÜBİTAK
Amount: 100,000 US Dollar
Duration: May 2017- April 2020

Student Supervision

A. Current

Mübecel Çisel (Ph.D. student, 2016-2021)
Saliha Sürme (Ph.D. student, 2017-2022)
Onur Özcan (PhD student, 2017-2019)
Begüm Bayablı (PhD student, 2019-2024)

Bilge Bahar Çamur (MS student, 2019-2021)
Şafak, Işın (MS student, 2019-2021)
Melis Çelik (MS student, 2019-2022)
Zeynep Melis Gül (MS student, 2019-2022)
Gizem Çağla Parlak (MS student, 2020-2022)
Başak Velioğlu (MS student, 2020-2022)

B. Past

Şeref Gül (Ph.D. student 2018, Asst. Prof. Istanbul University)
Sibel Çal-Kayıtmazbatır (Ph.D. student 2018, Postdoctoral Research Associate, Cincinnati Children Hospital)
Dr. Ehsan Saryloo (Ph.D. student 2017, Research Scientist at Koç University)
Dr. Selma Bulut (Ph.D. student, 2017, Currently Chief Scientist at Deva)
Dr. Mehmet Tardu (Ph.D. student, Currently Posdoc at University of Michigan)
Dr. Cihan Aydın (Postdoc, Currently Assist Prof at Medeniyet University)
Dr. Bengisu Seferoğlu (Ph.D. student, Currently Posdoc at University of Helsinki, Finland)
Dr. Hande Asımgil (Ph.D. student, Currently Research Associate at University Munich Germany)
Dr. Şule Beyhan Özdaş (Postdoc, Currently Assist Prof at Bilim Univ)
Dr. Gülnaz Tatlıcı (Postdoc, Currently Assist Prof at University of Alabama, USA)
Dr. İbrahim Barış (Postdoc, Currently Instructor at Koc Univ)
M. Emre Özdemir (MS student, Ph.D. EPFL, Switzerland, Currently Postdoctoral Researcher at The Novo Nordisk Foundation Center for Bio-sustainability)
Aytuğ Tuncel (MS student, Ph.D. WSU-USA, Currently Postdoctoral Fellow at John Inns-England)
Meriç Ataman (MS student, Graduated, Currently Ph.D. student at EPFL, Switzerland)
Işıl Tulum (MS student, Currently Ph.D. student at Osaka University)

İbrahim Gür (MS student, Currently Ph.D. student at Osaka University Japan)
Onur Öztaş (MS student, Currently Assit. Prof at Koç University)
Bilal Çakır (MS student, Currently postdoctoral fellow at Yale University)
Onur Dağlıyan (MS student, Currently Postdoc at Harvard School of Medicine, Boston)
Natali Özber (MS student, Currently Ph.D. student at Penn State-USA)
Pelin Armutlu (MS student, Currently Senior Scientists at Merck-USA)
Evrin Besray Ünal (MS student, Currently Postdoctoral Fellow, Center for genomic Regulation, Barcelona, Spain),
Gülsüm Elif Muku (MS student, Currently Ph.D. student at Pennsylvania State University)
Kaan Koper (MS students, Currently Ph.D. student at Washington State University)
Eylem Külküylüoğlu (MS student, Currently Ph.D. student at University of Illinois-Urbana-Champaigne)
Derya Kabacaoğlu (MS student, Currently Ph.D. student at Max-Planx)
Berke Gürkan (MS student, Currently Ph.D. student at University Groningen Nederland)
Çağla Ergün (MS student, 2019, Currently PhD student at Queensland University Australia)
Yağmur Umay Doruk (MS student 2019, Currently PhD student at University of California San Diego)
Uğur Meriç Dikbaş (MS student 2019, Currently PhD student at University of British Colombia)

C. Thesis Committee Member

Volkan Kurt, MS, 2005 (Koç University, Computational Science and Engineering)
Şennur Turgut, MS, 2005 (Koç University, Computational Science and Engineering)
Güneş Gündem, MS, 2006 (Koç University, Computational Science and Engineering)
Şevki Demir, Ph.D, 2008 (Middle East Technical University, Biochemistry)
Onur Demir, MS, 2008 (Koç University, Mechanical Engineering)
Pınar Karaman, MS, 2008 (Koç University, Computational Science and Engineering)
Alibey Öztürk, MS, 2008 (Koç University, Material Science and Engineering)
İlker Ocaklı, MS, 2008 (Koç University, Material Science and Engineering)
Emre Bıyık, MS, 2009 (Koç University, Mechanical Engineering)
Tuncay Şeker MS, 2009 (Bogazici University, Molecular Biology and Genetics)
Güher Işık Cesur MS, 2009 (İstanbul Technical University, Molecular Biology and Genetics)
Ali Baş, MS, 2009 (Koç University, Material Science and Engineering)
Mine Bakar, MS, 2010 (Sabancı University, Natural Science and Engineering)
Duygu Kuzuoğlu, MS, 2010 (Sabancı University, Natural Science and Engineering)
Enis Akgün, MS, 2010 (Koç University, Mechanical Engineering)
Ceren Yılmaz, MS, 2010 (Koç University, Material Science and Engineering)
Zeynep Goksel Özserp, 2012 (Koç University, Industrial Engineering)
Derya Güven, 2012 (Koç University, Computational Science and Engineering)
Tolga Yıldırım, 2012 (Boğaziçi University, Chemistry)
Saliha Babacan, PhD, 2014, (Koç University, Chem and Biol Eng)
Kadir Boztaş, MS, 2014, (Istanbul University, Biology)
Yusuf Can, MS, 2014, (Istanbul University, Biology)
Engin Çukuroğlu, PhD, 2015 (Koç University, Computational Science and Eng)
Emel Şen, MS, 2015 (Koç University, Computational Science and Eng)
Ahmet Köseoğlu, PhD, 2015, (Bogaci University, Chemistry)
Halenur MS, 2015, (Bogazici University, Chemistry)
Ekin Güney MS, 2015, (Koç University, Molecular Biology and Genetics)
Gülkız Baytek MS, 2015, (Koç University, Molecular Biology and Genetics)

Emine Guven-Maiorov PhD, 2015, (Koç University, Chem and Biol Eng)
Gözde, Görgülü, MS, 2016, (Gebze Technical University, Molecular Biology and Genetics)
Gözde, Özçelik, MS, 2016, (Gebze Technical University, Molecular Biology and Genetics)
Abdrrahman Keskin, MS, 2016, (Koç University, Molecular Biology and Genetics)
Burcu Türk, PhD, 2016, (Marmara University, Molecular Biology and Genetics)

Services

I was the first molecular biologist at Koç University and able to established the first molecular biology and biochemistry research lab using mostly external funds (around 3 million US Dollar). Then I participated for the foundation of a new department of Molecular Biology and Genetics establishing both undergrad and grad curriculum. I was also in a committee to recruit faculty to this department. I involved in following services at Koç Univ.

Chairman of Molecular Biology and Genetics, 2012-present
Biomedical Ethical Committee Member-2018-present
Committee Member of health and safety 2018-present
Coordinator of Molecular Biology and Genetics graduate program, 2012-2018
Summer Practice coordinator of Chemical and Biological Eng, 2004-2013
Graduate program coordinator Chemical and Biological Eng 2006-2011

Book Chapters

1-Okita TW, Greene TW, Laughlin MJ, Salamone PR, Woodbury R, Choi S, Ito H, Kavakli H, and Stephens K (1998) Engineering plant starch by the generation of modified plant biosynthetic enzymes. in Engineering Crops for Industrial End Uses, eds. Shewery, P.R., Napier, J.A., and Davis, P. (Portland Press Ltd., London), pp99-109.

2-Kandemir N and Kavakli IH (2002) Proteins and protein engineering. Plant Biotechnology II: Genetic engineering and its application. eds Mehmet Babaoglu, Sabahattin Ozcan and Ekrem Gurel. Bitki Biyoteknolojisi II (in Turkish)

3-Kavakli IH and Cihan (2019) Bitkilerde Biyolojik saat. Book: Bitki Biyoteknolojisinde Güncel Yaklaşımlar. Publisher Palme Yayınevi p251-262

4-Kavakli IH, Gul S, Berkel C, Bulut S, Tardu M and Baris I. (2018) Kanserde DNA tamiri ve tedavide DNA tamir yolları. Book: Kansere Moleküler Biyolojisi. Publisher: Kısayol Yayıncılık

5- Catal, T., Kavakli, H. IV.17. Hydrogen production by algae. Book: Green Energy to Sustainability: Strategies for Global Industries. Publisher: John Wiley & Sons, 2020.
<https://doi.org/10.1002/9781119152057.ch17>

Patents

- I.H. Kavakli, Turkay, M, S. Kizilel, B. Cakir, O. Dagliyan, A Molecule regulating activity of Insulin Degrading Enzyme (IDE), WO/2013/004525, PCT/EP2012/062186, 10.01.2013 ≥
- I.H. Kavakli, Turkay, M, S. Kizilel, B. Cakir, O. Dagliyan, A Molecule regulating activity of Insulin Degrading Enzyme (IDE), WO/2013/004556, PCT/EP2012/062404, 10.01.2013 ≥
- I.H. Kavakli, Turkay, M, S. Kizilel, B. Cakir, O. Dagliyan, A Molecule regulating activity of Insulin Degrading Enzyme (IDE), WO/2013/004527, PCT/EP2012/062190, 10.01.2013 ≥
- I.H. Kavakli, Turkay, M, S. Kizilel, B. Cakir, O. Dagliyan, A Molecule regulating activity of Insulin Degrading Enzyme (IDE), WO/2013/004557, PCT/EP2012/062409, 10.01.2013 ≥
- I.H. Kavakli, Turkay, M, S. Kizilel, B. Cakir, O. Dagliyan, Insulin parcalayan enzimin (IDE) aktivitesini duzenleyen bir molekul, Turk Patent Enstitusu, Patent No: TP 2013 15181 B, 25.06.2012
- I.H. Kavakli, Turkay, M, S. Kizilel, B. Cakir, O. Dagliyan, Insulin parcalayan enzimin (IDE) aktivitesini duzenleyen bir molekul, Turk Patent Enstitusu, Patent No: TP 2013 15182 B, 25.06.2012
- I.H. Kavakli, Turkay, M, S. Kizilel, B. Cakir, O. Dagliyan, Insulin parcalayan enzimin (IDE) aktivitesini duzenleyen bir molekul, Turk Patent Enstitusu, Patent No: TP 2013 15183 B, 27.06.2012
- I.H. Kavakli, Turkay, M, S. Kizilel, B. Cakir, O. Dagliyan, Insulin parcalayan enzimin (IDE) aktivitesini duzenleyen bir molekul, Turk Patent Enstitusu, Patent No: TP 201315184 B, 27.06.2012
- I.H.Kavaklı, Turkay M, Gul S 11-(4-chlorophenyl)-4-(2,3-dihydro-1H-indole-1-carbonyl)-3,11-dimethyl-5,10,dioxatricyclo[7.4.0.0,2,6,]trideca-1,3,6,8-tetraen-13-one and derivatives as destabilizer of CRY1 for the treatment of circadian rhythm associated diseases and disorders. PCT/TR2019/051248
- I.H.Kavaklı, Turkay M, Yarpurvar D 2-[2-({ 12,12-dimethyl-4-oxo-6-phenyl-3,11-dioxatricyclo[8.4.0.0,2,7]tetradeca-1,5,7,9-tetraen-8-yl}oxy)acetamido]benzaide and derivatives as inhibitor of CLOCK:BMAL1 interaction for the treatment of circadian rhythm diseases and disorders. PCT/TR2019/051082

Refereed Conference Proceedings

1. H. Urey, E. Timurdogan, E. Ermeke, I.H. Kavakli, B.E. Alaca (2011) MEMS Biosensor for Parallel and Highly Sensitive and Specific Detection of Hepatitis, IEEE MEMS 2011, Pages:920-923 , Jan , 2011, Cancun, Mexico
2. Kilinc, E. Timurdogan, E. Ermeke, C. Sagiroglu, I. Baris, A. Mostafazadeh, I. H. Kavakli, H. Urey, and B. Erdem Alaca (2011) Operation of Micromechanical Resonator Biosensor in Liquid Media, 7th Nanoscience and Nanotechnology Conference, NanoTR-VII, Pages:S2-J.2 June , 2011, Istanbul
3. Beldar S, O. Keskin, H. Kavakli, A. Gursoy (2011) Structure Based Analysis of the Interactions between PAS Domain Containing Circadian Clock Proteins, . ISMB-International conference on Intelligent Systems for Molecular Biology (ISMB), July 2011, Vienna, Austria

4. Bilal Cakir, Onur Dagliyan, Ezgi Dagyildiz, Halil Kavakli, Metin Türkay, Seda Kizilel (2010) Structure Based Drug Design For Insulin Degrading Enzyme (IDE), 2010 AICHE Annual Meeting Extended Abstracts, Systems Engineering Approaches in Biology and Biomedicine, NOV , 2011, Salt Lake City, UT
5. Dagliyan O, Kavakli IH, Turkay M. (2009) Classification of Activities and Binding Free Energies of Human Cytochrome P450 2D6b Inhibitors Using the Hyper-box Approach Proceedings of the 2006 International Conference on Bioinformatics and Computational Biology. P313-319
6. Enis Demir, Natali Ozber, Halil Kavakli, Seda Kizilel. (2009) Gold Nanoparticle-Assisted AFM Study of DNA Damage and Repair. Nanotechnology Conference Proceedings, Houston, TX, May 3-7, Volume 1, pp:327-330
7. Özber N, Tuncel A, Kavakli IH, Keskin Ö (2008) Insights into Subunit Interactions in the Heterotetrameric Structure of Potato ADP-glucose. The 13. National Biomedical Engineering Conference. Ankara.
8. Armutlu P, Özdemir ME, Türkay M, Kavaklı IH (2008) Structure-based drug design for prostate cancer. 13. National Biomedical Engineering Conference. Ankara.
9. Öztürk A, Ocaklı HI, Natali Özber, Halil Kavaklı, Erdem Alaca, and Hakan Ürey (2008) Application of MEMS based cantilever to biotechnology. The 13. National Biomedical Engineering Conference. Ankara.
10. Ocaklı HI, Alibey Öztürk, Natali Özber, Halil Kavakli, Erdem Alaca, and Hakan Ürey (2008) Resonant Cantilever Bio Sensor with Integrated Grating Readout. IEEE-LEOS Optical MEMS Conference, Munich Germany
11. Özber N, Ocaklı, HI, Öztürk A, Üray H, Alaca E, Kavaklı IH (2008) Functionalization of His-tagged Human Opioid on the Gold Surface of Cantilevers. The IASTED International Conference on Nanotechnology and Applications. Crete Greece
12. H. İlker Ocaklı, Alibey Öztürk, S. Holmström, Natali Özber, O. Ferhanoğlu, İ. Halil Kavaklı, H. Ürey and B. Erdem Alaca (2007) A Resonator-Based Mass Detector: Sensing of Biological Species. Ankara, Turkey. Nano-TR III Proceedings, 16
13. Tuncel A, Kavaklı IH, Keskin Ö. (2006) Structure prediction of potato large subunit ADP-glucose pyrophosphorylase. Proceedings of the 2006 International Conference on Bioinformatics and Computational Biology. P315-321
14. Özdemir E, Kavaklı IH, Türkay M (2006) Structure-based design and analysis of cytochrome P450 inhibitors for the treatment of prostate cancer. Proceedings of the 2006 International Conference on Bioinformatics and Computational Biology. P378-38

Posters and Presentations

1. *Kayıtmazbatır S and Kavakli IH (2017) Physical Interaction Between CRY1 and CBS Provide Bi-Directional Regulation in both Circadian Clock Function and Metabolism. July 16-21, 2017 Gordon Research Conference Chronobiology, Stowe/Flake, Vermont USA
2. *Yarparvar D and Kavakli IH (2017) Identification of Clock modifying Small Molecules Modulating CLOCK and BMAL1 Heterodimerization. July 16-21, 2017 Gordon Research Seminar Chronobiology, Stowe/Flake, Vermont USA
3. Seferoglu AB, Koper K, Can FB, Okita TW, Kavaklı IH (2014) Investigation of the heterotetrameric assembly of potato ADP-glucose pyrophosphorylase using random mutagenesis, Plant Biology-Annual Scientific Meeting of the American Society of Plant Biologists, 12-16 July 2014, Portland-Oregon, USA
4. *Kulkoyluoglu E and Kavakli IH (2014). An enzyme of a novel clock component: Cystathionine-B-Synthase (CBS). 3rd International Congress of the Molecular Biology Association of Turkey. September 10-12, Izmir Institute of Technology, Izmir, Turkey.
5. Cal S and Kavakli IH (2014). An enzyme of a novel clock component: Cystathionine-B-Synthase (CBS). 3rd International Congress of the Molecular Biology Association of Turkey. September 10-12, Izmir Institute of Technology, Izmir, Turkey.
6. *Kabacaoglu D and Kavakli IH (2014). Identification of LeprotL1 as a Core Clock Component in Mice. 3rd International Congress of the Molecular Biology Association of Turkey. September 10-12, Izmir Institute of Technology, Izmir, Turkey

Best Poster award

7. *Tardu M, Kavakli IH, Turkyay M (2014) Structure Based Drug Design for Sirtuin-6. IV Euro WG Conference On Operational Research in Computational Biology, Bioinformatics and Medicine. Poznan, Poland, June 26-28
8. *Gul S, Kavakli IH, Turkyay M (2014) Designing Small Organic Molecules to Regulate Circadian Clock in Mammals. IV Euro WG Conference On Operational Research in Computational Biology, Bioinformatics and Medicine. Poznan, Poland, June 26-28
9. Seferoglu AB and Kavakli IH (2013) Enhancing Heterotetramer Stability of ADP-Glucose Pyrophosphorylase by Reverse Genetics. Plant Biology 2013, Providence RI, USA, Jul20-24.
10. Asimgil H, Tardu M, Baris I, and Kavakli IH (2013) Transcriptional regulation of cryptochromes under blue-light conditions in *C. merolae*. Plant Biology 2013, Providence RI, USA, Jul20-24.
11. *Pellegrino R, Kavakli IH, Namni G, Christopher JC, Dinges DF, Kuna ST, Maislin G, Hans P.A. Van Dongen, Tufik S, Hogenesch JB, Hakonarson H, and Pack AI (2013) A Novel BHLHE41 Variant is Associated with Sleep Phenotypes in Humans. Gordon Research Conferences, Jul 14-19, New Port RI, USA

12. * Bulut S, Baris I, Daulet I, Isık I, Yilgor P, Yilgor E, Yilgor I, Lazoglu I, and Kavakli IH (2012) Geliştirilen Yeni Açık Mimari-Hızlı Prototip Sistemi (OARP) ile Üretilen PCL Skafoldlarının Doku Mühendisliği Açısından Uygunluğunun Test Edilmesi. 10th National Chemical Engineering Conference, Koç University, Istanbul, Turkey, September 3-6.
13. * Seferoglu AB, Koper K, Baris I, and Kavakli IH (2012) ADP-Glikoz Pirofosfarilaz Enziminin Heterotetramerik Yapısının Stabilize Edilmesi İçin Yönlendirilmiş Evrim Uygulaması, 10th National Chemical Engineering Conference, Koç Univeristy, Istanbul, Turkey, September 3-6,
14. *Seferoglu AB, Koper K, Barış I, and Kavaklı IH (2012) Enhancing Heterotetramer Stability of ADP-Glucose Pyrophosphorylase by Reverse Genetics, 15th European Congress on Biotechnology, Istanbul, Turkey, September 23-26.
15. * Seferoglu AB, Koper K, Barış I, and Kavaklı IH (2012) ADP-Glikoz Pirofosfarilaz Enziminin Heterotetramerik Yapısının Stabilize Edilmesi İçin Yönlendirilmiş Evrim Uygulaması, 17th National Biotechnology Congress, Istanbul, Turkey, September 25,
16. Tur kay M, Cakir B, Dagliyan O, Kavakli IH, Kizilel S (2011) Structure based discovery of small molecules to regulate the activity of insulin degrading enzyme, European Biotechnology Conference, OCT 2011, Istanbul
17. Kavakli IH and Asimgil H Purification and Characterization of five Members of Photolyase/Cryptochrome Family from *Cyanidioschyzon merolae*, Gordon Research Conferences , June 2011, Braga, Italy
18. Seferoglu AB, Barış I, and Kavakli IH (2011) Enhanced Heterotetrameric Formation of Potato ADP-glucose Pyrophosphorylase through Reverse Genetics, 16th European Carbohydrate Symposium, July 2011, Napoli Italy
19. Seferoglu AB, Barış I, and Kavakli IH (2011) Enhanced Heterotetrameric Formation of Potato ADP-glucose Pyrophosphorylase through Reverse Genetics, 9th Carbohydrate Bioengineering Meeting, May 2011, Lisbon Portugal
20. Seferoğlu AB., Barış İ. ve Kavaklı IH (2011) Patates ADP-Glikoz Pirofosforilazın Heterotetramer Oluşumunun Ters Genetik ile Kararlı Hale Getirilmesi. 22. National Biochemistry Conference, OCT 2010, Eskisehir, Turkey
21. Asimgil H and Kavakli IH (2011) Purification and Characterization of Photolyase-like Proteins from Red Algae *C. merola*, XII Congress of the EBRs 2011, August 2011, Oxford-UK
22. Oz GC, Tulum I, Kavakli IH, and Baris I (2011) Isolation and characterization of cDNAs of lentil ADP-glucose pyrophosphorylase, European Biotechnology Congress 2011, OCT 2011, Istanbul, Turkey
23. Azizoglu S, Kavakli IH, Kiziel R, Erman B, Kizilel S (2011) Computer-Aided Drug Discovery for DNA Photolyase: With an Emphasis on Biomolecular Interaction Analysis in Drug Discovery Using Surface Plasmon Resonance, 36th FEBS Congress Biochemistry for Tomorrow's Medicine, June 2011, Turin, Italy

24. * Kizilel S, Dagyildiz S, Cakir B, Dagliyan O, Kavakli IH, and Turkay M (2010) Structure based Drug Design for Insulin Degrading Enzyme, AIChE Annual Meeting, Systems Engineering Approaches in Biology and Biomedicine, NOV 2010, Salt Lake City, UT,USA
25. Demir E, Karahan HE, Asimgil H, Demirel AL, Kavakli IH, and Kizilel S (2010) Characterization of UV-Damage and Repair with Cry-Dash in DNA Using AFM and SPR, AIChE Annual Meeting, Engineering Fundamentals in Life Science Session, Nov , 2010, Salt Lake City, UT,USA
26. *Oztas O and Kavakli IH (2010) Blue light dependent induction of photolyase gene expression mediated by cryptochrome. Gordon Research Conferences, April 17-21, Barga, Italy
27. Konduri S, Timurdogan E, Memis O, Kavakli H , Alaca E, Urey H (2010) Micro-cantilever array based integrated optical system for biosensing applications. May 26-28, Biosensor 2010, 20th Anniversary World Congress on Biosensor, Glasgow, UK.
28. Kavakli IH (2010) Identification of two Amino Acids in the C-terminal Domain of Mouse CRY2 Essential for PER2 Interaction. June 26-July 1. 35th FEBS Congress Molecules of Life, Gothenburg, Sweden.
29. *Urey H, Timurdogan E, Yavuz S Kavakli H, Alaca BE (2010) Resonant Nano-Biosensor for Multi-Analyte Screening using optical MEMS. June 15-18, NANO TR VI, Çeşme Izmir
30. *Cakir B, Baris I, Kavakli IH, Kizilel S. (2010) Mutant İnsülin Parçalayan Enzimin Biyokimyasal Karakterizasyonu. June 22-25, 9th National Congress of Chemical Eng. Ankara, Turkey.
31. *Demir E, Asimgil H, Demirel L, Kavakli IH, Kızılel S (2010). Tek Zincirli DNA'da UV Hasarının ve CRY-DASH ile Hasarın Tamirinin Atomik Kütle Mikroskopu ile İncelenmesi. June 22-25, 9th National Congress of Chemical Eng. Ankara, Turkey.
32. Kavakli IH, Baris I, Ozber N, Tuncel A, and Keskin O. (2009) Identification amino acid residues of potato ADP-glucose pyrophosphorylase large Subunit that participate interaction with small subunit. 8th Carbohydrate Bioengineering Meeting. May10-13, Ischia, Naples, Italy.
33. *Tatlici G, Baris I, Ozber N, Kavakli IH. (2009) Analysis of physical interaction between mice cryptochrome and period proteins. The third international congress of applied chronobiology and chronomedicine (ICACC) May 17-22, Akko (Acre), Israel.
34. Kavakli IH, Baris I, Ozber N, Tuncel A, and Keskin O (2009) Identification amino acid residues of potato ADP-glucose pyrophosphorylase large Subunit that participate interaction with small subunit. In the annual meetings of the American Society of Plant Physiologists, July 18-22, Honolulu, Hawaii USA.
35. Baris I, Tatlici G, Ozber N, Kavakli IH (2009) Analysis of physical interaction between mice cryptochrome and period proteins. 15th International Congress on photobiology. June 18-23, Düsseldorf, Germany

36. *Asimgil H, Ozturk N, Sancar A, Kavakli IH (2009) Purification and characterization of photolyase-like proteins from red algae *C. merolae*. 15th International Congress on photobiology. June 18-23, Düsseldorf Germany.
37. *Türkay M ve Kavakli IH (2008) 1st International Conference on Drug Design and Discovery, Dubai UAE
38. *Armutlu P, Özdemir ME, Kahraman P, Kavakli IH, Türkay M (2007) Activity Classification of Cytochrome P450 C17 Inhibitors for the Treatment of Prostate Cancer 22nd European Conference on Operational Research, Prague, Czech Republic
39. *Türkay M, Ozdemir ME, and Kavakli IH (2007). Structure-based design of drugs for the treatment of prostate cancer, EURO XXII, Prague, Czech Republic, July
40. Alaca BE, Ürey H and Kavaklı IH (2007) Resonant microstructures for narcotics detection. Workshop on Molecular Biomimetics and Bionanotechnology Mayıs , 2007, İTÜ MOBGAM, İstanbul
41. *Alaca BE, Ürey H and Kavaklı IH (2007) Resonator-based biosensors. Biomedical Science and Technology Symposium, Aug, 2007, Yeditepe University-İstanbul
42. *Ocaklı Hİ, Öztürk A, Holmström S, Özber N, Ferhanoglu O, Kavaklı IH, Ürey H and Alaca BE (2007) A Resonator-Based Mass Detector: Sensing of Biological Species. Ankara, Türkiye. Nano-TR III Proceedings, 16
43. Özdaş Ş and Kavakli IH (2007) Isolation of partial cDNA of *Lens culnaris* ADP-glucose pyrophosphorylase. Biotechnology conference, Antalya, Türkiye
44. *Unal BE, Kavakli IH, Erman E (2006) Computational Search of the Interaction between Melanopsin and Cryptochrome2 Proteins. “Emerging Topics in Human Functional Genomics and Proteomics” (ICGEB Workshop), Antalya, TURKEY
45. Unal EB, Kavakli IH, and Erman B (2006) Computational Search of the Interaction between Melanopsin and Cryptochrome2 Proteins. Isolated Biomolecules and Biomolecular Interactions, Trest Castle, Czech Republic
46. Unal EB, Kavakli IH, and Erman B (2006) Computational Search of the Interaction between Melanopsin and Cryptochrome2 Proteins. 31st FEBS Congress, 2006, İstanbul-Turkey
47. Kavakli IH (2006) Identification of Interacting Domain of Mice Cryptochromes with Mice BMAL1 and PEROD2. Tenth Meeting Society for Research on Biological Rhythms. Sandestin, Folorida USA
48. *Tuncel A, Kavaklı HH, Keskin O. (2006) Structure prediction of potato large subunit ADP-glucose pyrophosphorylase. Proceedings of the 2006 International Conference on Bioinformatics and Computational Biology. Las Vegas USA

49. *Özdemir E, Kavaklı IH, Türkay M (2006) Structure-based design and analysis of cytochrome P450 inhibitors for the treatment of prostate cancer. Proceedings of the 2006 International Conference on Bioinformatics and Computational Biology. Las Vegas USA
50. Kavaklı IH, Hwang S-K, Salamone PR, Slattery CJ, and Okita TW (2005) Rapid purification of the potato ADP-glucose pyrophosphorylase by polyhistidine-mediated chromatography. In the annual meetings of the American Society of Plant Physiologists, Seattle, USA. Supplement of Plant Physiol
51. *Kavaklı IH (2005) Improve plant yield by manipulation the ADP-glucose pyrophosphorylase. In the annual meetings of XIV Biotechnology meetings. Eskişehir Turkey.
52. *Kavaklı IH, Kato, C, Choi S-B, Salamone PR, Okita TW, and Ito H (2000) Generation, characterization, and heterologous expression of up-regulated *Arabidopsis thaliana* leaf ADP-glucose pyrophosphorylase. 6th International Congress of Plant Molecular Biology. Quebec, Canada. Supplement to Plant Molecular Biology Reporter 18:2 S27-16
53. Salamone PR, Greene TW, Kavaklı IH, and Okita TW (2000) Directed molecular evolution of *Solanum tuberosum* L. ADP-glucose pyrophosphorylase small subunit homotetramer. 6th International Congress of Plant Molecular Biology. Quebec Canada. Supplement to Plant Molecular Biology Reporter 18:2 S27-32
54. Slattery CJ, Salamone PR, Kavaklı IH, and Okita TW (2000) Affinity purification and kinetic characterization of ADP-glucose pyrophosphorylase. 14th Symposium of The Protein Society, San Diego, California Protein Science 9 (Supplement 1):60
55. Salamone PR, Greene TW, Kavaklı IH, and Okita TW (2000) Directed evolution of a *Solanum tuberosum* L. ADP-glucose pyrophosphorylase small subunit homotetramer. 14th Symposium of The Protein Society, San Diego, California Protein Science 9 (Supplement 1):90
56. *Kavaklı IH, Greene TW, and Okita TW (1999) Generation of an up-regulated allosteric variant of potato ADP-glucose pyrophosphorylase by reversion genetics. In the 8th Western Photosynthesis Conference, Asilomar Conference Center Pacific Grove, California USA
57. Kavaklı IH, Salamone PR and Okita TW (1999) Enhanced assembly of the potato ADP-glucose pyrophosphorylase in *E.coli* by site-directed mutagenesis of conserved cysteines. The American Society For Biochemistry and Molecular Biology, San Francisco California USA The FASEB Journal, 13(7):1164

Travel Award

58. Kavaklı IH and Okita TW (1997) Structural determination of the large subunit ADP-glucose pyrophosphorylase cDNA from rice (*Oryza sativa* L.) In the annual meetings of the American Society of Plant Physiologists, Vancouver, Canada. Supplement of Plant Physiol. 114:175

59. Kavakli IH, Allahkverdiev SR, Kaya Z (1994) The effects of polystimulin A-6 on the germination *Brassica napus* and *Helianthus annuus* under the salt conditions. In the 9th Congress of FESPP in Brno, Czech Republic. *Physiologia Plantarum* p113

*** selected for talks**

Invited Talks

- 1-Kavakli IH (2000) Generation, characterization, and heterologous expression of up-regulated *Arabidopsis thaliana* leaf ADP-glucose pyrophosphorylase. 6th International Congress of Plant Molecular Biology. Quebec, Canada. Supplement to Plant Molecular Biology Meeting
- 2-Kavakli IH (2001) A genetic engineering approach to increase plant yield. BASF Corporation, Ames Iowa USA.
- 3-Kavakli IH (2001) Circadian Rhythm in mammals. Kemin Biotechnology, Des Moines, Iowa USA.
- 4-Kavakli IH (2003) Cryptochrome being a circadian clock regulator and circadian photoreceptor. Duke University, Medical Center, North Carolina USA.
- 5-Kavakli IH (2004) Cryptochrome: circadian clock regulator and circadian photoreceptor. Bogazici University, Istanbul Turkey.
- 6 Kavakli IH (2005) Circadian photoreception in mammals. Sabancı University, Istanbul-Turkey
7. Kavakli IH (2006) Reaction mechanism of *E.coli* photolyase. FEBS Forum For Young Scientists. (Key Note Speaker) İstanbul
8. Kavaklı IH (2008) İnsanda Biyolojik Saat. Sinirbilimlerinde Translasyonel Araştırma Çalıştayı, Dokuz Eylül Üniversitesi Sağlık Bilimleri Enstitüsü. İzmir
- 9.Kavakli IH (2008) İnsanda biyolojik Saat. 25. ulusal Gastroenteroloji Kongresi. Adana
- 10.Kavakli IH (2009). Memelillerde Biyolojik Saat. ITU 3. National Molecular Biology and Genetic Congress. August 17-20, İstanbul
11. Kavakli IH (2009) A genetic engineering approach to improve plant yield. International Symposium on Biotechnology: Developments and Trends. 27-30 September, Middle East Technical University, Ankara, Turkey
12. Kavakli IH (2010) Structural stability of heterotetrameric ADP-glucose pyrophosphorylase. 20th National Biology Congress. 21-25 June, Denizli, Turkey
13. Kavakli IH and Turkey M. (2011). Structure based drug design against biological clock related diseases. European Biotechnology Congress 2011, Sept 2011, İstanbul

15. Kavakli IH (2012) Biological clock in human. Koc University. School of Medicine . Univ 101 course
16. Kavakli IH (2015) A Genetic Engineering Approach to Improve Plant Yield. 2nd International Congress on Biosensor, June 10-12, 2015, Gediz University, İzmir, Turkey
17. Kavakli IH A Genetic Engineering Approach to Improve Plant. 1st National Plant Physiology Congress, September1-4, 2015, Ataturk University. Erzurum, Turkey
18. Kavakli IH (2016) Cryptochrome and cancer. 3th International Hematology Congress. May 5-8, Kayseri Turkey
19. Kavakli IH (2016) DNA repair mediated by photolyase. April 20-21, Ege University Science Festival, Izmir Turkey.
20. Kavakli IH (2016) Strain improvement of *Chlorella vulgaris* to enhance oil content. May 26 Boğaziçi University, Istanbul
21. Kavakli IH (2016) Discovery of the small molecules that regulate circadian rhythm. 7th European Congress of Pharmacology. June 26-30, Istanbul
22. Kavakli IH (2016) Small Molecules that regulate circadian clock through the cryptochrome. International Istanbul Technical University Molecular Biology and Genetics Student Congress'16, 7-9 October 2016.
23. Kavakli IH (2016) Small Molecules that regulate circadian clock through the cryptochrome. 23October 2016, Yeditepe University Istanbul
24. Kavakli IH (2017) Biological clock in human. 7.Numune-I Teraki Science Fair. 17-19 January, 2017. Istanbul High School
25. nduri S, Timurdogan E, Memis O, Kavakli H , Alaca E, Urey H
26. Kavakli IH (2017) Small Molecules that regulate circadian clock through the cryptochrome. Yeditepe Biyoteknoloji Topluluğu, 12-13 February, 2017, Yeditepe University Istanbul
27. Kavakli IH (2017) Biyolojik Saati Düzenleyen Küçük Moleküllerin Yapıya Dayalı İlaç Tasarım Yöntemlerinin Belirlenmesi. 4. ODTÜ Biyokimya Topluluğu konferansı, 16-17 Aralık, 2017, Ankara
28. Kavakli IH (2018) Hastalıkta ve sağlıkta Biyolojik saat. Göztepe Eğitim ve Araştırma hastanesi seminer daveti, Medeniyet Üniversitesi 30 Ocak 2018, İstanbul
29. Kavaklı IH (2018) CRY1 and CBS interaction provides bi-directional regulation of circadian clock and metabolism. Molecular Biology and Genetic Departmental seminar series, Bogazici University, Feb 16, Istanbul.
30. Kavaklı IH (2018). Small Molecules that regulate circadian clock through the cryptochrome. Aksaray University, April 16, Aksaray.

31. Kavaklı IH (2018) Discovery of a CLOCK-binding small molecule that enhances circadian rhythm. 6th International Congress of the Molecular Biology Association. Dokuz Eylül University, Izmir
32. Kavaklı IH (2018) Biyolojik Saat gen SNP'lerinin Moleküler etkileri. Kişiselleştirilmiş Tıp ve Moleküler Tanı Sempozyumu ve Biyoinformatik Anlamların Bilgisayar Simülasyon Kursu, İstanbul University DETAM, September 27-28, 2018 İstanbul
33. Kavaklı IH (2018) *C. merolae* as model organism to study blue-light photoreceptors International Symposium on *C. merolae* as model for unicellular eukaryotes. October 7-8, Freie University at Berlin, Germany.
34. Kavaklı IH (2018) Chronotherapy. The fifth Turkish Medical World Congress Workshop on PRECISION MEDICINE IN TURKEY: CURRENT SITUATION, CAPACITY BUILDING, AND MORE ... 27-28 October, 2018, İstanbul
35. Kavaklı IH (2018) Discovery of a CLOCK-binding small molecule that enhances circadian rhythm. Gebze Technical University, Biotechnology Institute, Gebze, Kocaeli, November 1, 2018
36. Kavaklı IH (2018) Hastalıkta ve sağlıkta biyolojik saat. İstanbul Medeniyet Üniversitesi Moleküler Biyoloji ve Genetik Topluluğu, İMÜGEN'18. December 01, 2018, İstanbul
37. Kavaklı IH (2018) The process of the photosynthesis. Combatting Climate Change with Carbon Dioxide Capture and Conversion Technologies. Koç University-Korea Joint Research Symposium. December 6-7, 2018, İstanbul.
38. Kavaklı IH (2019) Biyolojik Saat gen SNP'lerinin Moleküler etkileri. 4.Yaşam Bilimleri Kongresi, Abdullah Gül Üniversitesi, 22-23 Şubat, Kayseri.
39. Kavaklı IH (2019) Hastalıkta ve sağlıkta Biyolojik Saat. 13. Moleküler Biyoloji ve Genetik Hafta Sonu, Boğaziçi Üniversitesi, 24 Şubat, İstanbul.
40. Kavaklı IH (2019) Kanser ve Biyolojik Saat. 2. Moleküler Kanser Zirvesi, İstinye Üniversitesi, 22-23 Mart, İstanbul.
41. Kavaklı IH (2019) Hastalıkta ve Sağlıkta Biyolojik Saat. IX Horizons Bilgent Kongresi, Bilkent Üniversitesi, 6-7 Nisan, Ankara.
42. Kavaklı IH (2019) Hastalıkta ve Sağlıkta Biyolojik Saat. Marmara Üniversitesi Tıp Fakültesi Öğrencileri seminer daveti. 9 Nisan, İstanbul.
43. Kavaklı IH (2019) Sirkadiyen Saat: Hücreden Tüm bedene. 22. Türk Toraks Derneği Kongresi. 10-14 Nisan, Antalya.
44. Kavaklı IH (2019) Hastalıkta ve Sağlıkta Biyolojik Saat. Biruni Üniversitesi II.BİGEN Moleküler Biyoloji ve Genetik Kongresi 4-5 Mayıs, İstanbul.

45. Kavakli IH (2019) Biyolojik Saat-Beslenme İlişkisi. Tohumdan Geleceğe Temalı kişisel Beslenme, Tat Genel Müdürlüğü, 24 Mayıs, İstanbul.
46. Kavakli IH (2019). Yapıya dayalı ilaç tasarımı ve Rastgele mutasyon teknikleri. Uygulamalı Biyokimyada Güncel Konular, 24-27 Haziran 2019. Kayseri
47. Kavakli IH (2019) A molecule that destabilize CRY1 enhances apoptosis in cancer cell 18-22 Eylül, 2019, 1st International Multidisciplinary Cancer Research Congress, Dicle University, Diyarbakır
48. Kavakli IH (2019) Discovery of a CLOCK-binding small molecule that enhances circadian rhythm XVI European Biological Rhythms Society Congress, 25-29 Aug, 2019, France Lyon
49. Kavakli IH (2020) Coronaviruses. Koc University AICChE.
50. Kavakli IH (2021) Hastalıkta ve sağlıkta Biyolojik saat. Karadeniz Teknik Üniversitesi İlaç ve Farmasötik Teknoloji Uygulama ve Araştırma Merkezi Çevrimiçi Seminer, 23 Mart
51. Kavakli IH (2021) Biyolojik saat. Istanbul Kultur University IEEE student Branch. 10-11 Nisan