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Education Information

Post Doctorate, University of California, Davis, Food Science And Technology , United States Of America 2015 - 2016

Doctorate, University of California, Davis, Food Science And Technology, United States Of America 2010 - 2015

Postgraduate, Ankara University, Food Engineering, Turkey 2007 - 2009

Undergraduate, Ankara University, Food Engineering, Turkey 2003 - 2007

Foreign Languages

English, C1 Advanced

Dissertations

Doctorate, Selective Prebiotic Activity of N-glycans Released From Milk Glycoproteins by Novel Endo- β -N-acetylglucosaminidase, University of California, Davis, Food Science And Technology, Molecular Biology-Microbiology, 2014

Postgraduate, Farklı türden meyve sularının doğal sorbitol içeriği, Ankara University, Food Engineering, Food Chemistry, 2009

Research Areas

Life Sciences, Molecular Biology and Genetics, Microbial Genetics, Natural Sciences

Academic Titles / Tasks

Associate Professor, Canakkale Onsekiz Mart University, Fen Fakültesi, Moleküler Biyoloji ve Genetik, 2020 - Continues
Other, University of California, Davis, Food Science And Technology, Molecular Biology, 2015 - 2016

Advising Theses

Karav S., Characterization of Pitaya N-Linked Glycans and In-vitro Identification of Potential Prebiotic Effect, Postgraduate, M.KARYELİOĞLU(Student), 2023

Karav S., Determination of Bioactive Milk N-Glycans in Different Cattle Breeds, Postgraduate, E.NTELITZE(Student), 2022

Karav S., A Novel In-Vitro Digestion Model Designed by Integration of Microbiome Associated Enzymes, Postgraduate, M.KAPLAN(Student), 2022

Karav S., Recombinant production and characterization of a novel n-glycosidase (EndoBI-2) from *Bifidobacterium longum* subsp. *infantis* 157F, Postgraduate, H.DUMAN(Student), 2022

Karav S., Determining therapeutic proteins and prebiotic N-glycan concentrations in bovine colostrum, Postgraduate, A.ARSLAN(Student), 2022

Karav S., Recombinant production and characterization of new bifidobacterial glycosidases, Postgraduate, B.SUCU(Student), 2021

Karav S., Investigation of the glycosidase activity and recombinant production of different *Bacteroides* species, Postgraduate, A.BAYRAKTAR(Student), 2021

Karav S., Recombinant production of a glycosidase by using an in-vivo cloning system and its immobilization via different strategies, Postgraduate, B.PEKDEMİR(Student), 2020

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **BCM-7: Opioid-like Peptide with Potential Role in Disease Mechanisms.**
Bolat E., Eker F., Yılmaz S., Karav S., Oz E., Brennan C., Proestos C., Zeng M., Oz F.
Molecules (Basel, Switzerland), vol.29, no.9, 2024 (SCI-Expanded)
- II. **Exploring the diverse biological significance and roles of fucosylated oligosaccharides**
Pekdemir B., KARAV S.
FRONTIERS IN MOLECULAR BIOSCIENCES, 2024 (SCI-Expanded)
- III. **Exploring the impact of colostrum supplementation on athletes: a comprehensive analysis of clinical trials and diverse properties**
Yalçıntaş Y. M., Baydemir B., Duman H., Eker F., Bayraktar Biçen A., Ertürk M., Karav S.
FRONTIERS IN IMMUNOLOGY, 2024 (SCI-Expanded)
- IV. **Antimicrobial Properties of Colostrum and Milk**
Eker F., Akdaşçı E., Duman H., Yalçıntaş Y. M., Canbolat A. A., Kalkan A. E., KARAV S., Šamec D.
Antibiotics, vol.13, no.3, 2024 (SCI-Expanded)
- V. **Distinguishing Turkish pine honey from multi-floral honey through MALDI-MS-based N-glycomics and machine learning**
Masri S., Aksoy S., DUMAN H., KARAV S., Kayili H. M., SALİH B.
Journal of Food Measurement and Characterization, 2024 (SCI-Expanded)
- VI. **Bovine colostrum and its potential contributions for treatment and prevention of COVID-19.**
Duman H., Karav S.
Frontiers in immunology, vol.14, pp.1214514, 2023 (SCI-Expanded)
- VII. **Lactoferrin: neuroprotection against Parkinson's disease and secondary molecule for potential treatment.**
Eker F., Bolat E., Pekdemir B., Duman H., Karav S.
Frontiers in aging neuroscience, vol.15, pp.1204149, 2023 (SCI-Expanded)
- VIII. **Phage-encoded carbohydrate-interacting proteins in the human gut**
Rothschild-Rodriguez D., Hedges M., KAPLAN M., KARAV S., Nobrega F. L.
Frontiers in Microbiology, vol.13, 2023 (SCI-Expanded)
- IX. **Release of bifidogenic N-glycans from native bovine colostrum proteins by an endo- β -N-acetylglucosaminidase**
Bunyatratchata A., Parc A. L., de Moura Bell J. M. L. N., Cohen J. L., Duman H., Arslan A., KAPLAN M., Barile D., KARAV S.
Enzyme and Microbial Technology, vol.162, 2023 (SCI-Expanded)
- X. **A toolbox of machine learning software to support microbiome analysis**
Marcos-Zambrano L. J., López-Molina V. M., GÜNGÖR B., Frohme M., Karadzovic-Hadziabdic K., Klammsteiner T., Ibrahim E., Lahti L., Loncar-Turukalo T., Dharmo X., et al.

Frontiers in Microbiology, vol.14, 2023 (SCI-Expanded)

- XI. **Lactoferrin for COVID-19 prevention, treatment, and recovery**
Bolat E., Eker F., KAPLAN M., Duman H., Arslan A., Saritas S., ŞAHUTOĞLU A. S., KARAV S.
FRONTIERS IN NUTRITION, vol.9, 2022 (SCI-Expanded)
- XII. **Role of milk glycome in prevention, treatment, and recovery of COVID-19**
KAPLAN M., ŞAHUTOĞLU A. S., Saritas S., Duman H., Arslan A., Pekdemir B., KARAV S.
FRONTIERS IN NUTRITION, vol.9, 2022 (SCI-Expanded)
- XIII. **Benefits of A2 Milk for Sports Nutrition, Health and Performance**
KAPLAN M., BAYDEMİR B., GÜNAR B. B., Arslan A., Duman H., KARAV S.
FRONTIERS IN NUTRITION, vol.9, 2022 (SCI-Expanded)
- XIV. **Immobilization of a Bifidobacterial Endo-ss-N-Acetylglucosaminidase to Generate Bioactive Compounds for Food Industry**
Pekdemir B., Duman H., Arslan A., KAPLAN M., Karyelioglu M., ozer T., Kayili H. M., SALİH B., Henrick B. M., Duar R. M., et al.
FRONTIERS IN BIOENGINEERING AND BIOTECHNOLOGY, vol.10, 2022 (SCI-Expanded)
- XV. **Biofortified Whey/Deglycosylated Whey and Chickpea Protein Matrices: Functional Enrichment by Black Mulberry Polyphenols**
Ozleyen A., Cinar Z. O., KARAV S., Bayraktar A., Arslan A., Kayili H. M., SALİH B., TÜMER T.
PLANT FOODS FOR HUMAN NUTRITION, vol.77, no.1, pp.51-61, 2022 (SCI-Expanded)
- XVI. **Production of Bovine Colostrum for Human Consumption to Improve Health**
KAPLAN M., Arslan A., Duman H., Karyelioglu M., BAYDEMİR B., Guenar B. B., Alkan M., Bayraktar A., Tosun H. I., Ertuerk M., et al.
FRONTIERS IN PHARMACOLOGY, vol.12, 2022 (SCI-Expanded)
- XVII. **Determining Total Protein and Bioactive Protein Concentrations in Bovine Colostrum**
Arslan A., Duman H., Kaplan M., Uzkuç H., Bayraktar A., Ertürk M., Alkan M., Frese S. A., Duar R. M., Henrick B. M., et al.
Journal of Visualized Experiments, vol.2021, no.178, 2021 (SCI-Expanded)
- XVIII. **Recombinant Production of Bifidobacterial Endoglycosidases for N-glycan Release**
Sucu B., Bayraktar A., Duman H., Arslan A., KAPLAN M., Karyelioglu M., Ntelitze E., Tastekin T., Yetkin S., Erturk M., et al.
JOVE-JOURNAL OF VISUALIZED EXPERIMENTS, vol.2021, no.173, 2021 (SCI-Expanded)
- XIX. **Bovine Colostrum and Its Potential for Human Health and Nutrition**
Arslan A., KAPLAN M., Duman H., Bayraktar A., Erturk M., Henrick B. M., Frese S. A., KARAV S.
FRONTIERS IN NUTRITION, vol.8, 2021 (SCI-Expanded)
- XX. **Potential Applications of Endo-beta-N-Acetylglucosaminidases From Bifidobacterium longum Subspecies infantis in Designing Value-Added, Next-Generation Infant Formulas**
Duman H., KAPLAN M., Arslan A., ŞAHUTOĞLU A. S., Kayili H. M., Frese S. A., KARAV S.
FRONTIERS IN NUTRITION, vol.8, 2021 (SCI-Expanded)
- XXI. **Structural insights of two novel N-acetyl-glucosaminidase enzymes through in silico methods**
ŞAHUTOĞLU A. S., Duman H., Frese S. A., KARAV S.
TURKISH JOURNAL OF CHEMISTRY, vol.44, no.6, pp.1703-1715, 2020 (SCI-Expanded)
- XXII. **N-glycans from human milk glycoproteins are selectively released by an infant gut symbiont in vivo**
KARAV S., Casaburi G., Arslan A., KAPLAN M., Sucu B., Frese S.
JOURNAL OF FUNCTIONAL FOODS, vol.61, 2019 (SCI-Expanded)
- XXIII. **Reduced colonic mucin degradation in breastfed infants colonized by *Bifidobacterium longum* subsp. *infantis* EVC001.**
Karav S., Casaburi G., FRESE S.
FEBS open bio, vol.8, pp.1649-1657, 2018 (SCI-Expanded)
- XXIV. **Thoroughbred mare's milk exhibits a unique and diverse free oligosaccharide profile**
KARAV S., Salcedo J., Frese S. A., Barile D.
FEBS OPEN BIO, vol.8, no.8, pp.1219-1229, 2018 (SCI-Expanded)

- XXV. **Immobilization of an Endo-beta-N-acetylglucosaminidase for the Release of Bioactive N-glycans**
Cohen J. L., KARAV S., Barile D., Bell J. M. L. N. d. M.
CATALYSTS, vol.8, no.7, 2018 (SCI-Expanded)
- XXVI. **Selective deglycosylation of lactoferrin to understand glycans' contribution to antimicrobial activity of lactoferrin.**
Karav S.
Cellular and molecular biology (Noisy-le-Grand, France), vol.64, pp.52-57, 2018 (SCI-Expanded)
- XXVII. **Studying Lactoferrin N-Glycosylation**
KARAV S., German J. B., Rouquie C., Le Parc A., Barile D.
INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES, vol.18, no.4, 2017 (SCI-Expanded)
- XXVIII. **Characterization of recombinant human lactoferrin N-glycans expressed in the milk of transgenic cows.**
PARC A., Karav S., ROUQUIÉ C., MAGA E., BUNYATRATCHATA A., BARILE D.
PloS one, vol.12, 2017 (SCI-Expanded)
- XXIX. **Recent advances in immobilization strategies for glycosidases.**
Karav S., COHEN J., BARILE D., de M.
Biotechnology progress, vol.33, pp.104-112, 2017 (SCI-Expanded)
- XXX. **Oligosaccharides Released from Milk Glycoproteins Are Selective Growth Substrates for Infant-Associated Bifidobacteria.**
Karav S., Le P., Leite N., FRESE S., KIRMIZ N., BLOCK D., BARILE D., MILLS D.
Applied and environmental microbiology, vol.82, pp.3622-3630, 2016 (SCI-Expanded)
- XXXI. **Characterizing the release of bioactive N-glycans from dairy products by a novel endo-β-N-acetylglucosaminidase.**
Karav S., BELL J., Le P., LIU Y., MILLS D., BLOCK D., BARILE D.
Biotechnology progress, vol.31, pp.1331-9, 2015 (SCI-Expanded)
- XXXII. **A novel endo-β-N-acetylglucosaminidase releases specific N-glycans depending on different reaction conditions.**
Parc A., Karav S., De M., FRESE S., LIU Y., MILLS D., BLOCK D., BARILE D.
Biotechnology progress, vol.31, pp.1323-1330, 2015 (SCI-Expanded)
- XXXIII. **Kinetic characterization of a novel endo-β-N-acetylglucosaminidase on concentrated bovine colostrum whey to release bioactive glycans.**
Karav S., PARC A., de M., ROUQUIÉ C., MILLS D., BARILE D., BLOCK D.
Enzyme and microbial technology, vol.77, pp.46-53, 2015 (SCI-Expanded)
- XXXIV. **Effect of Cold Storage of Various Pomegranate Cultivars Fruit Juices on Health Promoting Compounds and Their Activities**
KARAV S.
JOURNAL OF FOOD AND NUTRITION RESEARCH, vol.3, no.9, pp.593-598, 2015 (SCI-Expanded)

Articles Published in Other Journals

- I. **Understanding of the Contribution of Fetuin O-glycans for the Release of New Bioactive Compounds by a Novel Endo-β-N-acetylglucosaminidase**
KARAV S.
KAHRAMANMARAS SUTCU IMAM UNIVERSITY JOURNAL OF NATURAL SCIENCES, vol.21, no.3, pp.286-291, 2018 (Peer-Reviewed Journal)
- II. **Understanding of the Contribution of Fetuin O-glycans for the Release of New Bioactive Compounds by a Novel Endo-beta-N-acetylglucosaminidase**
Karav S.
KSU TARIM VE DOGA DERGISI-KSU JOURNAL OF AGRICULTURE AND NATURE, vol.21, no.3, pp.286-291, 2018 (ESCI)

- III. **Application of industrial treatments to donor human milk: influence of pasteurization treatments, storage temperature, and time on human milk gangliosides**
Salcedo J., Karav S., Parc A. L., Cohen J. L., Bell J. M. L. N. d. M., Sun A., Lange M. C., Barile D.
npj Science of Food, vol.2, no.1, 2018 (Scopus)
- IV. **Antioxidant Capacity and Total Phenolic Contents of Peach and Apricot Cultivars Harvested from Different Regions of Turkey**
KARAV S.
INTERNATIONAL JOURNAL OF FOOD AND NUTRITION SCIENCE, vol.1, no.4, pp.13-17, 2012 (Peer-Reviewed Journal)

Books & Book Chapters

- I. **Application of a Novel Endo- β -N-Acetylglucosaminidase to Isolate an Entirely New Class of Bioactive Compounds: N-Glycans**
KARAV S.
in: Enzymes in Food Biotechnology Production, Applications, and Future Prospects, , Editor, Elsevier, pp.389-404, 2018

Refereed Congress / Symposium Publications in Proceedings

- I. **Recombinant Production and Characterization of a Novel N-glycosidases (EndoBI-2) from Bifidobacterium longum subsp. infantis 157F**
Duman H., Karav S.
5th International Eurasian Conference on Biological and Chemical Sciences (EurasianBioChem), 2022, 23 November 2022, pp.293
- II. **PROTEIN ISOLATION AND N- GLYCAN CHARACTERIZATION OF DIFFERENT MUSHROOM SPECIES BY USING PNGase F ENZYME**
Çağırtekin T., Karav S.
IV-INTERNATIONAL CONFERENCE OF FOOD, AGRICULTURE, AND VETERINARY SCIENCES, Van, Turkey, 27 - 28 May 2022, pp.426-427
- III. **DETERMINATION OF BIOACTIVE MILK COMPONENTS IN VARIOUS CATTLE BREEDS**
Ntelitze E., Karav S.
4th International Conference of Food, Agriculture, and Veterinary Sciences, Van, Turkey, 27 - 28 May 2022, pp.41-42
- IV. **DETECTION OF PREBIOTIC EFFECT OF PITAYA N-GLYCANS BY USING AN IN-VITRO DIGESTION SYSTEM**
Karyelioğlu M., Karav S.
The Sixth International Symposium on Pharmaceutical and Biomedical Sciences, Gaziantep, Turkey, 26 - 28 May 2022, pp.47
- V. **Novel In-Vitro Digestion Model Designed by Integration of Microbiome Associated Enzymes**
Kaplan M., KARAV S.
4th International Eurasian Conference on Biological and Chemical Sciences, Turkey, 24 - 26 November 2021
- VI. **Selective Deglycosylation of Therapeutic Proteins via Novel Bifidobacterial Glycosidases**
Sucu B., Bayraktar A., Kaplan M., Arslan A., Duman H., Karyelioğlu M., Ntelitze E., Yetkin S., Karav S.
3rd International Eurasian Conference on Biological and Chemical Sciences, İstanbul, Turkey, 19 - 20 March 2020
- VII. **Investigation of the Glycosidase Activity and recombinant Production of Different Bacteroides Species**
Bayraktar A., Sucu B., Kaplan M., Arslan A., KARAV S.
3rd International Eurasian Conference on Biological and Chemical Sciences, Turkey, 19 - 20 March 2020

- VIII. **Comparison of two Novel Endo- β -N-acetylglucosaminidase Enzymes of *Bifidobacterium longum* subsp. *infantis***
Duman H., Karav S., Şahutoğlu A. S.
7th International BAU Drug Design Congress, İstanbul, Turkey, 19 - 21 December 2019
- IX. **Prebiotic Activity of Dragon Fruit Glycans Released by a Novel Enzyme Endo- β -N-acetylglucosaminidase**
Karyelioğlu M., Ntelitze E., KARAV S.
V. International Congress on Natural and Health Sciences, Turkey, 13 - 15 December 2019
- X. **Use of Human Associated Novel Enzymes to Understand How Lactoferrin Shapes Our Gut Microbiome**
Karav S., Sucu B., Bayraktar A., Pekdemir B., Duman H., Arslan A., Kaplan M.
3rd International Human Microbiome Congress, İstanbul, Turkey, 7 - 09 November 2019
- XI. **Rapid In-vivo Cloning and Expression of Glycosyl Hydrolases by pRhamTM-N-His Vector**
Pekdemir B., KARAV S.
International Congress on Agriculture and Forestry Research, Turkey, 8 - 10 April 2019
- XII. **Immunoglobulin Glikanlarının, Farklı Füzyon Etiketlerle Aktivitesi Değiştirilmiş Glikosidazlarla Ayrımı**
KARAV S.
12. Ulusal Afinite Teknikleri Kongresi, Turkey, 5 - 07 September 2018
- XIII. **In-Vivo Determination of Colonic Mucin Degradation in Breastfed Infants with Altered Gut Microbiome**
KARAV S., Casaburi G., Frese S. A.
6th International Congress of the Molecular Biology and Association of Turkey, Turkey, 5 - 08 September 2018
- XIV. **N-glycan Release Manipulation of a novel endo- β -Nacetylglucosaminidase by Using Genetically Attached Tags**
KARAV S.
6th International MOLECULAR BIOLOGY and BIOTECHNOLOGY CONGRESS, 22 - 25 December 2017

Supported Projects

- KARAV S., Project Supported by Higher Education Institutions, Farklı Formül Sütlerin N-glikan İçeriğinin Belirlenmesi ve Prebiyotik Özelliğinin İncelenmesi, 2022 - Continues
- Kılıç D. D., Erginal A. E., Bil E., Yüreğilli Göksu D., Satmaz İ., Çam A., Karav S., Öz Aydın S., Yalçınkaya Önder E., Bulut A., et al., TUBITAK Project, Lisans Öğrencileri Proje Hazırlama ve Yazma Eğitimi, 2023 - 2024
- Karav S., TUBITAK Project, Farklı Alternatif Protein Kaynaklarından Biyoaktif Glikan Üretimi, 2023 - 2024
- Karav S., TUBITAK Project, Mikrobiyom Kaynaklı Yeni Enzimler ile Tasarlanmış Sindirim Sistemi Modeli ile Glikanların Bağırsak Mikrobiyotası Üzerine Etkilerinin Belirlenmesi, 2021 - 2024
- KARAV S., Çağırtekin T., Project Supported by Higher Education Institutions, Farklı Mantar Türlerinin Protein İzolasyonu ve PNGase F enzimi Kullanılarak N-Glikan Karakterizasyonunun Yapılması, 2022 - 2023
- KARAV S., Karyelioğlu M., Project Supported by Higher Education Institutions, Pitaya N- Bağlı Glikanlarının Karakterizasyonu ve Potansiyel Prebiyotik Etkisinin in-vitro Koşullarda Belirlenmesi, 2021 - 2023
- Karav S., TUBITAK Project, Farklı Tekniklerle Aktivitesi Manipüle Edilmiş Yeni Bacteroides ve Bifidobakteri Glikosidazları Yardımıyla Glikanların Glikoproteinlerin Biyolojik Özelliklerine Olan Katkılarının Belirlenmesi, 2019 - 2023
- KARAV S., Ntelitze E., Project Supported by Higher Education Institutions, Çeşitli Sığırların Biyoaktif Süt N-Glikanlarının Belirlenmesi, 2022 - 2022
- Karav S., Duman H., TUBITAK Project, A1 Ve A2 Sığır Kolostrum Örneklerinin İn-Vitro Sindirimlerinin Gerçekleştirilmesi Ve Karşılaştırılması, 2021 - 2022
- Karav S., Duman H., TUBITAK Project, Farklı Pastörizasyon Uygulamalarının (Uht, Ltl, Htst) A2 Süt Glikan, Laktoferrin Ve İgg Miktarına Etkisinin Araştırılması, 2021 - 2022
- Karav S., Duman H., TUBITAK Project, A1 Ve A2 Sütleri β -Kazein Proteinlerinin Sindirimi Sonucu Elde Edilen Peptitlerin

Antimikrobiyal Özelliklerinin Araştırılması, 2021 - 2022

KARAV S., Karyelioğlu M., Sucu B., Project Supported by Higher Education Institutions, N-glikozidaz Enzimi ile Spirulina Proteinlerinden Glikanların Ayrımı, Saflaştırılması ve Kantifikasyonu, 2020 - 2021

KARAV S., Ntelitze E., Karyelioğlu M., Project Supported by Higher Education Institutions, Peptidil N-Glikosidaz F (PNGaz F) Enziminin Rekombinant Olarak Üretilmesi ve Karakterizasyonu, 2020 - 2021

Karav S., TUBITAK Project, Yeni Endo- β -N-asetilglukozaminidaz enzimi kullanarak üretilen ilk seçici prebiyotik kaynağı glikanlar, 2017 - 2021

Karav S., TUBITAK Project, Yeni Endo- β -N-Asetilglukozaminidaz Enzimi Kullanarak Üretilen İlk Seçici Prebiyotik Kaynağı; Glikanlar, 2017 - 2020

TÜMER T., KARAV S., Kulabaş S., Project Supported by Higher Education Institutions, Antiinflamatuvar biyoaktif fenolik bileşiklerin doğal kaynaklardan absorpsiyonunda yenilikçi protein matris teknolojilerinin geliştirilmesi ve karakterizasyonu, 2017 - 2019

Karav S., Other International Funding Programs, Application of EVC001 to Reduce Mucin Degradation, 2017 - 2018

Metrics

Publication: 56

Citation (WoS): 568

Citation (Scopus): 605

H-Index (WoS): 13

H-Index (Scopus): 14