

Assist. Prof.
Hilal Betül KAYA AKKALE

Education Information

Post-Doc
2018-2019
Cornell University

PhD
2016
Ege University

Master
2009
Ege University

Bachelor's
2006
Ege University

MANİSA CELAL BAYAR BİYOMÜHENDİSLİK

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Research Topics

- Genome editing in plants
- QTL and association mapping
- Next generation sequencing technologies
- Molecular marker-assisted plant breeding
- Population genetics

Collaborations

- Manisa Viticulture Research Institute
- Cornell University
- USDA

Publications

1. **Kaya HB**, Dilli Y, Oncu Oner T, Unal A. Exploring genetic diversity and population structure of a large grapevine (*Vitis vinifera* L.) germplasm collection in Türkiye. Frontiers in Plant Science. 2023. https://doi.org/10.3389/fpls.2023.1121811
2. Kolasinliler G, Aagre MM, Akkale C, **Kaya HB**. The use of CRISPR-Cas-based systems in bacterial cell factories. Biochemical Engineering Journal. 2023;194:108880. https://doi.org/10.1016/j.bej.2023.108880
3. Wang Li, **Kaya HB**, Zhang N, Rai R, Willmann M, Carpenter S, Read A, Martin F, Fei Z, Leach J, Martin G, Bogdanove AJ. Spelling changes and fluorescent tagging with prime editing vectors for plants. Frontiers in Genome Editing 2021;3(7). https://doi.org/10.3389/fgeed.2021.617553

You can access the other publication from here.

Project Experience

1. Application of innovative "prime arrangement" technique in the development of powdery mildew resistant cultivars in grapevine (TUBITAK, 2022-2024 Manager)
2. Optimization of Meristem Transformation for CRISPR-Cas9 Mediated Genome Editing (MCBÜ-BAP, 2020-2022, Manager)
3. Development of SSR Markers from Enrichment Genomic DNA, Sequencing of Chloroplast DNA of Saffron and It's Relatives by Next Generation Sequencing Method, Using the Chloroplast Sequence and SSR Markers in Phylogeny Analysis in Saffron. (COST, 2012-2015, Researcher)

You can access the other projects from here.

Analysis and Tests

- ✓ **Vector design and vector acquisition for CRISPR-Cas9-mediated genome editing**
- ✓ **Cloning**
- ✓ **Bacteria and plant transformation**
- ✓ **Protoplast isolation and transformation**
- ✓ **DNA isolation**
- ✓ **DNA quantity and quality analysis**
- ✓ **Population description**