

BIOCHEMISTRY LABORATORIES

Department	Department of Chemistry	
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General Information	Discovering of novel enzymes and recombinant production, biochemical characterization of enzymes, enzyme immobilization studies, biosensor technologies, biotechnological processes, green synthesis of nanoparticles, antimicrobial activity assays, DNA interaction analysis.	
Applications	<ul style="list-style-type: none">○ Recombinant enzyme production○ Electrophoresis: DNA and protein analysis○ Enzyme activity assays: Determination of enzyme activity using spectrophotometric techniques○ Enzyme Characterization: pH, Temperature, substrate specificity and kinetics○ Enzyme immobilization: Enzyme immobilization and characterization○ Fermentation Technologies: Bacterial fermentation (1-5000 ml)○ Carbohydrate assays	
Laboratory Photos	<p>1L-01</p>  <p>1L-02</p>	



1L-07



1L-08



Equipment

- UV-VIS-NIR Spectrophotometer (Shimadzu 3600)
- TLC Plate Reader (CAMAG)
- HPLC (Shimadzu LC 20)

	<ul style="list-style-type: none"> ○ FPLC (Acta Prime Plus) ○ GC (Shimadzu GC 2010 Plus) ○ Mikroplate reader (Spectramax PLUS) ○ Incubators (Heidolph Unimax 1010, New Brunswick Scientific Excella 25 ve Zhwy-211d) ○ Agarose Gel Electrophoresis (ThermoScientific) ○ Protein Electrophoresis (Bio-Rad) ○ PCR (Finnzymes, Veriti 96 Well Thermal Cyclor) ○ Freeze drier (Scanvac Cool Safe) ○ Autoclave (Varioklav) ○ Microcentrifuges (Eppendorf 5415 ve Wise Spin CF-10) ○ Centrifuges (Eppendorf 5810 ve Nüve NF 1200 R) ○ Ice machine (İzmaç) ○ -80°C freezer (New Brunswick Scientific)
<p>Projects</p>	<ul style="list-style-type: none"> ○ Tübitak, 104M385 (2005-2007) Production of Isomaltooligosaccharides from Sucrose Using Membrane Bioreactors, 114.000 TL ○ Tübitak, 106M001 (2009-2011), Investigation of Activities and Expressions of Pyruvate Dehydrogenase Complex and Pyruvate Dehydrogenase Kinase and Phosphatase Isoenzymes in Breast Cancer and Malignant Mesothelioma Cells, 239.906 TL ○ Tübitak Teydeb:7090515 (2010-2012) Diacylglycerid Oil Production ○ Tübitak, 110T754 (2011-2013), Development of Nitroreductase Prodrug Systems for Cancer therapy, 287.400 TL ○ Tübitak, 109Y372 (2011-2013), Biotechnological Treatment of Biowastes for the Production of High Value Added Products, 281.150 TL ○ GTU, BAP A105-36 (2017-2018), Development of phenylboronic acid modified a new electrode surface for using biosensor applications, 10.000 TL ○ GTU, BAP A105-23 (2018-2019), Development of laccase based biosensor for detection of phenolic compounds, 7500 TL ○ GTU, BAP A102-18 (2017-2018), Poly-3-hydroxybutyrate Production Using Molasses, 10.000 TL ○ GTU, BAP A105-28 (2018-2019) Green synthesis of gold nanoparticles using pomegranate peel extract, 7500 TL ○ Tubitak, 119Z580 1002, (2019-), Expression and Biochemical Characterization of Madurella mycetomatis Laccase Enzyme in Pichia pastoris, 43.992,00 TL