Research Sector
General Facilities & Specialized Research Units & Laboratories
Dentistry

Institute/department اسم الجهة		Equipment name اسم الجهاز	Equipment Description (Manufacturer & Model No.) وصف الجهاز	Equipment Photo صورة الجهاز	uses of equipment استخدامات الجهاز
KFAS 2011550201	Dentistry	96 Well 5 Color Real Time PCR System	Applied Biosystems. Model: 7500 – Fast RT-PCR system		"The 7500 Fast Real-Time PCR System enables standard 96-well format high speed thermal cycling, significantly reducing your run time for quantitative real-time PCR applications, delivering results in about 35 minute .Five-color detection system provides the flexibility to perform a variety of applications including gene expression analysis,SNP genotyping and plus/minus assays. Advanced optical configuration supports a broader range of fluorophores, including FAM™/SYBR® Green I, VIC®/JOE™, NED™/TAMRA™/Cy3™, ROX™/Texas Red®, and Cy5™ dyes"
KFAS 2011550201	Dentistry	Thermal Cycler	Applied Biosystems. Model: 9902		Thermal cyclers are used to amplify DNA and RNA samples by the PCR by regulating temperature during cyclical programs
KFAS 2011550201	Dentistry	Low Temperature	Thermoscientific. Model: UXF 70086V63		Low temperature (ULT) freezer is a refrigerator that stores samples at between –40 to –86 °C (–40 to –123 °F)
KFAS 2011550201	Dentistry	Low Temperature	Thermoscientific. Model: UXF 70086V63		Low temperature (ULT) freezer is a refrigerator that stores samples at between –40 to –86 °C (–40 to –123 °F)
KFAS 2011550201	Dentistry	Automated Anaerobic System Freezer -80°C	Mart Microbiology. Model: AN2CTS		Anoxomat rapidly removes an oxygenated environment from a jar and replaces it with a precise amount of an anaerobic gas mixture. The Advanced Anoxomat is an automatic, micro-processor controlled system for the cultivation of anaerobic microbes.
KFAS 2011550201	Dentistry	Micro Plate Absorbance Reader	Bio Rad. Model: Biorad - imark		Microplate reader is used to measure chemical, biological or physical reactions, properties, and analytes like ELISA, Bradford assay etc.
KFAS 2011550201	Dentistry	Immunoplate Microplate Washer	Bio Rad. Model: 1575-8C		Microplate washers are designed to control the procedure of washing experimental samples arranged in plate-based formats. Microplate washers dispense, soak and aspirate liquids from the plate in seconds.
KFAS 2011550201	Dentistry	Trans-blot Turbo Transfer System	Bio Rad. Model: Trans-Blot Turbosystem		The Trans-Blot Turbo transfer system can be used in separation, transfer and analysis of proteins (Western blotting)
KFAS 2011550201	Dentistry	Gel Documentation Imaging System	Syngene. Model: CHEM XR-5		Gel documentation system is used to record and analyze the results of gel electrophoresis and membrane blotting experiments. These instruments are necessary for visualizing stained or labeled nucleic acids and proteins in media such as agarose, acrylamide, or cellulose.
KFAS 2011550201	Dentistry	PicoDrop Spectrophotometer	Picodrop. Model: Pico 200		PicoDrop Spectrophotometer is used for measurements of common laboratory samples, such as DNA, RNA and protein, in small volumes, with a high degree of accuracy and precision.
KFAS 2011550201	Dentistry	Centrifugal Vacuum Concentrator	Eppendorf. Model: Concentrator		Vacuum centrifuge concentrator uses a vacuum, centrifugal force, and sometimes heat or gas blow down to evaporate liquid and concentrate DNA, RNA, nucleotides, and other proteins
KFAS 2011550201	Dentistry	UV PCR workstation	Star Lab. Model: AC632LFUVC		A PCR workstation or PCR hoods are used in genetic and molecular biology labs for the preparation of samples and to prevent cross-contamination between samples. It is a workspace enclosed on three sides and have no circulation which helps to combat contamination.
KFAS 2011550201	Dentistry	CO2 Incubator	Thermo Scientific. Model: 321		CO2 incubators are able to provide optimal conditions for cell growth. These incubators must provide the factors that affect cell growth and keep them constant. These factors include temperature of 37°C ± 0.5°C, 5% carbon dioxide, and 95% humidity.
KFAS 2011550201	Dentistry	Ultrasonic Homogenizer	OMNI. Model: Omni Ruptor 4000		Ultrasonic homogenizers have a wide range of applications, including disintegrating cells and biological tissues, DNA protein extraction, RNA hydrolysis, and protein microencapsulation.It homogenize samples to create uniform and consistent mixtures.
KFAS 2011550201	Dentistry	Centrifuge	Eppendorf. Model: 5430R		Centrifuges separate heterogeneous mixtures into their various components – liquids in liquids, solids in liquids, and liquids in gases, based on the different densities of the components. One of the most common uses is to separate red blood cells and other blood components from whole blood.
KFAS 2011550201	Dentistry	Thermomixer C	Eppendorf. Model: C5382		Thermomixer combines excellent mixing performance with excellent temperature control to ensure complete, dependable and reproducible test results. Improve your assay results by mixing and incubating samples at the same time.
KFAS 2011550201	Dentistry	Bench Top Autoclave	Systec. Model: Systec DE-45		Benchtop Autoclaves are small laboratory sterilizers designed to provide routine sterilization functions while preserving valuable lab space. They use high pressure, heated steam to sterilize a variety of liquids, media, instruments, glassware, plasticware and other commonly used lab items.
SRUL 01/14	Dentistry	3D Surface measurement System	Leica. Model: DCM8		"The Leica DCM8 is controlled by Leica SCAN software. This powerful software has an icon-based interface for fast data capture and analysis. The Multiple Measurement Recipe (MMR) can be used to acquire measurements from different XY locations, repeat measurements in the same position, assess evolution and then obtain statistical information quickly and accurately. The features and applications include, • Magnifications for confocal & focus variation up to 100X • Magnification for interferometry is 20X • HD Imaging • HD 3D Topography • Surface topography measurements- step height, roughness, volume etc. • Microscopic details of surface. • Fundamental surface analysis. • Medical field, Life science and Industry"
SRUL 01/14	Dentistry	Research microscope	Carl Zeiss. Model: Axio imager 2		". Provides sophisticated imaging in fluorescence and transmitted light. 2. Excellent optics and homogeneous illumination in both transmitted light and fluorescence applications. 3. The contrast manager, light manager and vibration free unit always ensure defined condition and reproducible results. 4. Resolves finest details of samples in the field of life science research with importance to quality. 5.The fluorescence beam path and high efficiency fluorescence filter sets of this research microscope deliver shorter exposure times. 6. Axio imager 2 can be used for particle analysis and/or correlative microscopy. 7. Ideal for investigating o Metallic structures o Composites o Glass o Wood o Ceramics o Polymers o Liquid crystals etc."
SRUL 01/14	Dentistry	Data Acquisition System	AD Instruments. Model: PowerLab 16/35		"1. Perform various functions needed for data acquisition, signal conditioning and pre-processing. 2. Records a broad range of signals simultaneously. 3. Gives high quality, reproducible data while meeting the international safety standards. 4. The system has 16-bit resolution and is capable of recording at speeds of up to 200 000 samples per second. 5. 2 built-in analog outputs for stimulation or pulse generation and a trigger input. 6. By adding the required amplifiers, transducers, and electrodes powerLab system can be used for multiple life science applications."
SRUL 01/14	Dentistry	Data Acquisition System	AD Instruments. Model: PowerLab 16/35		"It is a Computed Tomography nanoCT system specially designed for scientific and industrial computed tomography(microCT and nanoCT) and 3D metrology. Key features and benefits are, • Nondestructive three-dimensional visualization of samples. • Since the whole geometry of the object is scanned, precise and reproducible 3D measurements of complex objects is possible. • High - power nanofocus X-ray tube (180 kV/20 W) with down to 200nm detail detectability. • Max. sample size 240mm x 250mm in height and 3Kg weight. • Unique temperature stabilized digital GE DXR detector for a high dynamic range. • Advanced detics's CT software. • The data generated can be analyzed using the VOLUME GRAPHICS (VGSTUDIOMAX 2023.3.1) software • Different types of Analysis modules are available (refer GE workstation) which enhances its applications in Industry, Medical ,Life science etc • Can be used for material science – allows colour coded 2D and 3D models of images according to difference in gray scale values , measures precisely the distance ,polyline length,angle etc. • The radiation safety cabinet"
SRUL 01/14	Dentistry	Work station for GE Nanotomm microCT	General Electric (GE). Model: Workstation		"Updated version of VOLUME GRAPHICS (VGSTUDIOMAX 2023.3.1) • Different Analysis Modules options are available, such as, • Wall Thickness Analysis- Analyzes the wall thickness of the selected object using the ""Ray method "" algorithm • Fiber Composite Material Analysis(FOMA) -Designed to calculate and visualize local and global fiber orientations and fiber volume fractions in composite materials. • Gray value analysis – It is designed to examine the selected volume or ROI for its gray value distribution and density hot spots. • Slice area. Analysis-Designed to calculate the area enclosed by the surface determination in a slice. • Displacement- This analysis shows how each surface point on the actual object is displaced compared to the corresponding point on the nominal object. • Nominal /Actual Comparison –It is a way of showing and analysing the difference between the nominal and an actual object. • Coordinate Measurement . • Big screen and sharper images . • More than one researcher can use the software simultaneously"

SRUL 01/14	Dentistry	Bioindenter	Antonpaar. Model: TTX-UNHT3-Bio		"1. It is an ideal instrument for characterizing the mechanical properties of tissues and soft materials in human body. 2. Specifically designed for research on soft biological soft .materials, for example, soft tissue 3. Versatile instrument for characterizing time dependent properties such as, o Elastic modulus (using Hertz's method) o Creep o Other mechanical properties 4. For testing of, o Cartilage o Tissues o Molecular structures o Hydrogels o Ocular tissues 5. Perfectly suited for long-term measurements on all types of materials from the atomic to the nanoscale, including. o Polymers o Very thin layers o Soft tissues."
SRUL 01/14	Dentistry	Anaerobic Incubator	Don Whitley Scientific. Model: DG 250		Anaerobic incubators provide a non-oxygen environment to cultivate and handle anaerobic microbe. They usually form a part of the chambers or workstations that are used in laboratories specializing in anaerobic culture work.
SRUL 01/14	Dentistry	Nanodrop Spectrophotometer	Thermo Scientific. Model: NanoDrop OneC		The Nanodrop Spectrophotometer is used primarily to measure DNA, RNA or protein concentrations in the UV/visible light range. It can be used to measure absorbance spectra or single wavelengths of these macromolecules in solution.
SRUL 01/14	Dentistry	Chewing Simulator	SD Mechatronik. Model: CS-4		"▪ Determination of wear resistant of composite . ▪ Fracture resistance of crowns ,bridges and implants. ▪ Simulation of bruxism to test occlusal splints."
SRUL 01/14	Dentistry	Thermocycler	SD Mechatronik. Model: TC-4		"▪ Thermocycling ▪ Thermal loading ▪ Liquid tempering during chewing simulation"
SRUL 01/14	Dentistry	T2D Gel Electrophoresis System	Bio-Rad Model: Protein i12 IEF		Two-dimensional gel electrophoresis (2DGel) unit method used for the detection and analysis of proteins. It has been designed as a combination of the 2DGel, IEF and SDS-PAGE methods, and is used in the analysis of complex protein mixtures.