Items require speical attention are marked with *

Items require speical attent Laboratory	Category	Equipment no.	Location	Equipment name	Model no.	Equipment details
	and gary					96-well format,
		BSL-090	9W Rm510A	Real Time - PCR	Roche LC 480	Reaction volume: 10-100 μL, Support SYBR Green, TaqMan, HRM assays *requires LC480 96-well plate
		BSL-099	9W Rm510A	Microvolume UV-Vis spectrophotometer	Nanodrop 2000c	Allow measurement using cuvette
		BSL-092	9W Rm510A	Thermal cycler	Biorad C1000 Touch	96-well format, with gradient function Reaction volume: 10-50 μL
		BSL-110	9W Rm510A	Texture analyzer	Stable Micro Systems TA.XT. plus	Equipped with 500 g and 5 kg loadcell
	Analytical instruments	BSL-131	9W Rm510A	Thermal cycler	Applied Biosystems Veriti 96-well	Support 96-well plate 8-well strip Single dome shape 0.2 mL PCR tube
		BSL-133	9W Rm510A	Ultra Performance Liquid Chromatography system	Waters ACQUITY I Class	Up to 18,000 psi, PDA eλ detector: 190-800 nm Flow through needle design to reduce carryover
		BSL-177	11W Rm527	UV-Vis spectrophotometer	Agilent Cary 3500	*requires column, solvents and vials Double beam, 190–1100 nm 8 cuvette positions
		BSL-055	9W Rm510A	Microcentrifuge	Eppendorf 5424	4 temperature controlled zones
				-		With 24 place 0.4- 2.0 ml rotor,
		BSL-078	9W Rm510A	Refrigerated Centrifuge	Beckman Coulter Allegra 25R	multiwell plate rotor
		BSL-119	9W Rm510A	Refrigerated Centrifuge	Eppendorf 5430R	Rotors for 1.5/2mL, 15mL and 50mL tubes
	Centrifugation	BSL-111	11W Rm527	Ultracentrifuge	Beckman Coulter Optima XPN 100	Three rotors: Swinging bucket, 6 x 38.5 mL, 28,000 rpm, 141,000 x g Swinging bucket, 6 x 13.2 mL, 41,000 rpm, 288, 000 xg Fixed angle, 8 x 13.5 mL, 90,000 rpm, 694,000 x g
		BSL-120	11W Rm527	Refrigerated Centrifuge	Eppendorf 5430R	Rotors for 1.5/2mL, 15mL and 50mL tubes
		BSL-178	11W Rm527	Floor centrifuge	Beckman Coulter Avanti JXN-26	JLA-16.250 for 6x250ml bottles, JS-5.3 for 72x15mL or 28x50mL tubes and JA-30.50Ti for 8x50ml conical tubes
		BSL-132	11W Rm525A	Refrigerated centrifuge	Eppendorf 5702R	Swing bucket rotor A-4-38, with 15/50 mL adapters
		BSL-134	11W Rm525A	Refrigerated centrifuge	Eppendorf 5804R	
		BSL-071	9W Rm510A	Freezer (-20 deg C)	Thermo Forma 727	
		BSL-072	9W Rm510A	Refrigerator (4 deg C)	Recvo REL2304V21	
		BSL-080	9W Rm510A	Freezer (-20 deg C)	Revco ULT-430W	<u>_</u>
		BSL-081	9W Rm510A	Freezer (-20 deg C)	Revco ULT-430W	-
BSC @ 9W & 11W		BSL-176 BSL-136	9W Rm510B 9W Rm510A	Undercounter laboratory refrigerator Freezer80 deg C	Haier HYC-118A Thermo TSX600V	-
[Featuring our Mass	Cold Storage	BSL-102	11W Rm527	Refrigerator - 4 deg C	Thermo R700-GAEW-TSC	_
spectrometry Core, offering most of our basic		BSL-104	11W Rm527	Freezer20 deg C	Thermo F700-SAEW-TSC	
and advanced equipment, 1 co-working space with 9		BSL-105	11W Rm527	Freezer80 deg C	Thermo TSX600V	
benches (Rm 527), 1 microbiology room (Rm		BSL-106	11W Rm527	Freezer80 deg C	Thermo TSX600V	
510B), 1 cell culture room (Rm 525A), 1 freeze dryer		BSL-026	11W Rm527	Refrigerator (4 deg C)	Sanyo MPR - 721	-
room (Rm 525B)]		BSL-103 BSL-107	11W Rm525A 11W Rm525A	Refrigerator - 4 deg C Cryopreservation Storage Equipment	Thermo R700-GAEW-TSC Thermo Locator Jr. Plus	4 racks, each rack can hold 5 boxes
		BSL-141	11W Rm525A	Cryopreservation Storage Equipment	Thermo Locator Jr. Plus	4 racks, each rack can hold 5 boxes
		BSL-073	9W Rm510A	Biosafety cabinet	Thermo Model 1386 Series A2, Class II, Type A2	For the work of clean reagents and materials preparation
		BSL-074	9W Rm510A	Chemical fumehood	HAMILTON H series 1500 single-sided	_
					(CM02 controller) HAMILTON H series 1500 single-sided	
		BSL-075 BSL-079	9W Rm510A 9W Rm510A	Chemical fumehood Chemical fumehood	(CM02 controller) S+B Ecoline	
	Contamination Control					For the work of biosafety level 2 or below materials in the
		BSL-082	9W Rm510B	Biosafety Cabinet	Labconco Class II A2	absence of volatile toxic chemicals
		BSL-094 BSL-007	9W Rm510B 11W Rm527	Portable autoclave Chemical fumehood	Hirayama HG-50 Dynaflow 1800	For autoclave of waste and contaminated materials
		BSL-126	11W Rm527	Vertical autoclave	Hirayama HG-133	For autoclave of clean stuff
		BSL-123	11W Rm525A	Biosafety cabinet	Thermo 1300 Series Class II, Type A2	For the work of biosafety level 2 or below materials in the absence of volatile toxic chemicals
		BSL-181	11W Rm525A	Biosafety cabinet	Nuair Labgard 437-600S Class 2	For the work of biosafety level 2 or below materials in the absence of volatile toxic chemicals
		BSL-182	11W Rm525A	Biosafety cabinet	Nuair Labgard 437-600S Class 3	For the work of biosafety level 2 or below materials in the absence of volatile toxic chemicals
	Imaging and Microscopy	BSL-096	9W Rm510A	Stereomicroscope	Leica S4 E Stereozoom	Magnification of 6.3X to 30X
		BSL-100	11W Rm525A	Fluorescence Inverted Microscope	Carl Zeiss Axio Observer A1	Image capture With filter cube for viewing DAPI, GFP and Cy3
		BSL-101	9W Rm510A	Gel Documentation System	Azure c600	Chemiluminescent detection without film Three channel RGB excitation
		BSL-118 BSL-128	11W Rm525A	Automated cell counter	Thermo Countess II FL Thermo EVOS XL Core	With fluorescence cube for DAPI, GFP and RFP channel
	Incubation	BSL-128 BSL-005	11W Rm525A 9W Rm510B	Cell Culture microscope Orbital shaking incubator	Thermo EVOS XL Core Thermo Forma 441	 25-400 rpm, 10°C above ambient to 60°C
		BSL-130	9W Rm510B	Bacterial incubator	Thermo HERATHERM IGS60	Maintained at 37°C
		BSL-109	9W Rm510A	Thermal mixer	Thermomixer C	With adapter for 1.5 mL tube and flat bottom plate
		BSL-124	11W Rm527	Water bath	Thermo Precision 10L GP	-
		BSL-179 BSL-180	11W Rm527	Convection oven	Froilabo AP 120	120L, ambient +10°C to +250°C
		BSL-180 BSL-121	11W Rm527 11W Rm525A	Convection oven Carbon dioxide incubator	Froilabo AP 120 Thermo HERA VIOS 160i	120L, ambient +10°C to +250°C Can achieve hypoxia conditions
		BSL-122	11W Rm525A	Carbon dioxide incubator	Thermo HERA VIOS 160i	Can achieve hypoxia conditions
		BSL-125	11W Rm525A	Water bath	Thermo Precision 10L GP	-
		BSL-174 BSL-038	11W Rm525A 9W Rm510A	CO2 resistant shaker Vortex mixer	Thermo MaxQ 2000 CO2 Plus Thermo Scientific Maxi Mix® II	
		BSL-060	9W Rm510A 9W Rm510A	Rocker	Labquake 415220	

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Laboratory	Category	Equipment no.	Location	Equipment name	Model no.	Equipment details
		BSL-063	9W Rm510A	Hot plate with stirrer	Jenway 1100	
		BSL-089	9W Rm510A	Electroporator	Harvard Apparatus BTX ECM 830	Voltage range: 5-3000 V, Pluse duration: 10 µs to 10s *requires cuvette
		BSL-091	9W Rm510A	Vertical diffusion cell system	Hanson 6-cell manual test system (58-6M)	With manual sampling syringe, circulating waterbath, and jacketed media replace beaker
		BSL-097	9W Rm510A	Micro-injection system	Eppendorf TransferMan NK2 and FemtoJet	Integrated coarse and fine manipulator control via joystick Injection volume from femtoliters to microliters
		BSL-098	9W Rm510A	Micropipette puller and microforge	Narishige PC-10 micropipette puller and MF-900 microforge	Micropipette puller - single/double pull mode Microforge - separate rotation for vertical and horizontal movement, foot switch for heater ON/OFF
		BSL-108	9W Rm510A	Water purification system	Pall Cascada I	Provides 18.2 MΩ.cm type I water
		BSL-114	9W Rm510A	Analytical Balance	Sartorius SECURA225D-1S	0-120 g, readability 0.01 mg
		BSL-115	9W Rm510A	Analytical Balance	Sartorius ENTRIS5201-1S	0-5,200 g, readability 0.1 g
BSC @ 9W & 11W		BSL-011	9W Rm510A	Ultrasonic cleaner	Bransonic® 5510	
[Featuring our Mass		BSL-006	11W Rm527	Glass washer and dryer	Labconco Steamscrubber &	
spectrometry Core,				•	Flaskscrubber 44204	
offering most of our basic and advanced equipment,	Miscellaneous	BSL-010 BSL-013	11W Rm527 11W Rm527	Ultrasonic cleaner	Bransonic® 5510	
1 co-working space with 9 benches (Rm 527), 1		BSL-013	11W Rm527	Ultrasonic cell disruptor/homogenizer Hot plate with stirrer	Branson Digital Sonifier® S-450D Cimarec® SP 131320-33	For cell disruption and homogenization
microbiology room (Rm		BSL-030	11W Rm527	Hot plate with stirrer	Cimarec® SP 131320-33	
510B), 1 cell culture room (Rm 525A), 1 freeze dryer		BSL-031	11W Rm527	Hot plate with stirrer	Cimarec® SP 131320-33	
room (Rm 525B)]		BSL-032	11W Rm527	Dri-block heater	Barnstead International Microprocessor control 2000	20 wells for 1.5 mL tube
		BSL-033	11W Rm527	Dri-block heater	Barnstead International Microprocessor control 2000	20 wells for 1.5 mL tube
		BSL-035	11W Rm527	Vortex mixer	Thermo Scientific Maxi Mix® II M37610-33	-
		BSL-054	11W Rm527	Nitrogen evaporator	Organomation N-EVAP 112	24 holders for 50mL tubes
		BSL-187	11W Rm527	Rotary Evaporation System	Heidolph Hei-VAP Expert	With Chilling condenser
		BSL-061	11W Rm527	Ultrasonic cleaner	Crest 275DGA	
		BSL-062	11W Rm527	Vortex mixer	Labquake SI-T246	
		BSL-066	11W Rm527	Power supply for SDS-PAGE	Amersham Biosciences	
		BSL-067	11W Rm527	Power supply for SDS-PAGE	Amersham Biosciences	
		BSL-116 BSL-117	11W Rm527 11W Rm527	Analytical Balance Analytical Balance	Sartorius SECURA225D-1S Sartorius ENTRIS5201-1S	0-120 g, readability 0.01 mg 0-5,200 g, readability 0.1 g
		BSL-129	11W Rm527	Ice maker	HOSHIZAKI FM-150KE	0-0,200 g, readability 0.1 g
		BSL-127	11W Rm525B	Freeze Dryer	Labconco FreeZone Plus (-84° C) 4.5	
					Liter	
		BSL-137	15W Rm101-103	Thermal cycler	Biorad C1000 Touch	Dual block, 48 wells each
	Analytical instruments	BSL-148 BSL-184	15W Rm101-103	Microvolume UV-Vis spectrophotometer Real Time - PCR	Nanodrop OneC Wi-Fi Applied Biosystems QS7 Flex	Allow measurement using cuvette 96 and 384-well format, Reaction volume: 10-100 µL, Support SYBR Green, TagMan, HRM assays
	Centrifugation	BSL-138	15W Rm101-103	Refrigerated centrifuge	Beckman Coulter Microfuge 20R	Fixed-angle rotor for 24x1.5mL & 2.0mL tubes
		BSL-139	15W Rm101-103	Refrigerated centrifuge	Beckman Coulter Avanti J-15R	JS-4.750 rotor for microplates, 56x15mL and 28x50mL conical tubes
		BSL-140 BSL-151	15W Rm101-103	Floor centrifuge	Beckman Coulter Avanti JXN-26	JLA-16.250 rotor for 6x250ml bottles, 24x15mL and 6x50ml conical tubes
		BSL-151	15W Rm101-103 15W Rm101-103	Refrigerated centrifuge Refrigerated centrifuge	Thermo ST8R Thermo ST8R	
		BSL-135	15W Rm101-103	Freezer80 deg C	Thermo TSX600V	
		BSL-142	15W Rm101-103	Combined refrigerator/freezer	PHCbi MPR-414F	
		BSL-143	15W Rm101-103	Combined refrigerator/freezer	PHCbi MPR-414F	
	Cold storage	BSL-144	15W Rm101-103	Refrigerator - 4 deg C Refrigerator - 4 deg C	PHCbi MPR-721	
		BSL-145 BSL-146	15W Rm101-103 15W Rm101-103	Freezer20 deg C	PHCbi MPR-721 Haier DW-30L818	
		BSL-147	15W Rm101-103	Freezer20 deg C	Haier DW-30L818	
				· ·		For the work of biosafety level 2 or below materials in the
BSC @ 15W		BSL-153	15W Rm101-103	Biosafety cabinet Biosafety cabinet	Thermo 1300 Series Class II, Type A2 Thermo 1300 Series Class II, Type A2	absence of volatile toxic chemicals For the work of biosafety level 2 or below materials in the
[Featuring our Flow	Contamination Control			•	•	absence of volatile toxic chemicals For the work of biosafety level 2 or below materials in the
Cytometry Core, offering 10 co-working benches, 2 cell culture rooms and 1		BSL-155	15W Rm101-103	Biosafety cabinet	Thermo 1300 Series Class II, Type A2	absence of volatile toxic chemicals For the work of biosafety level 2 or below materials in the
cell culture room for viral vectors]		BSL-156 BSL-175	15W Rm101-103 15W Rm101-103	Biosafety cabinet Chemical fumehood	Thermo 1300 Series Class II, Type A2 Waldner Series chemical fumehood	absence of volatile toxic chemicals
		BSL-168	15W Rm101-103	Portable autoclave	Hirayama HG-50	
		BSL-169	15W Rm101-103	Portable autoclave	Hirayama HG-50	
		BSL-149	15W Rm101-103	Automated cell counter	Thermo Countess II FL	
	Imaging and Microscopy	BSL-150 BSL-164	15W Rm101-103 15W Rm101-103	Automated cell counter Cell culture microscope	Thermo Countess II FL Nikon Ts2 Inverted Microscope	
		BSL-165	15W Rm101-103	Cell culture microscope	Nikon Ts2-FL Inverted Microscope	Fitted with DAPI, FITC and TRITC filter cubes
		BSL-166	15W Rm101-103	Gel Documentation System	Bio-Rad ChemiDoc MP	Chemiluminescent detection without film Three channel RGB excitation Two channel infrared (IR) direct detection
	Incubation	BSL-157	15W Rm101-103	Carbon dioxide incubator	Thermo Heracell VIOS 160i	Can achieve hypoxia conditions
		BSL-158	15W Rm101-103	Carbon dioxide incubator Carbon dioxide incubator	Thermo Heracell VIOS 160i Thermo Heracell VIOS 160i	Can achieve hypoxia conditions
		BSL-159 BSL-160	15W Rm101-103 15W Rm101-103	Carbon dioxide incubator Carbon dioxide incubator	Thermo Heracell VIOS 160i Thermo Heracell VIOS 160i	Can achieve hypoxia conditions Can achieve hypoxia conditions
		BSL-161	15W Rm101-103	Water bath	Thermo Precision 10L GP	
		BSL-162	15W Rm101-103	Water bath	Thermo Precision 10L GP	
		BSL-163	15W Rm101-103	Water bath	Thermo Precision 10L GP	
		BSL-170 BSL-171	15W Rm101-103	Convection oven	Froilabo AP 120	
	Miscellaneous	BSL-171 BSL-167	15W Rm101-103 15W Rm101-103	Convection oven Ice maker	Froilabo AP 120 Hoshizaki FM-150KE	
		BSL-172	15W Rm101-103	Water purification system	MilliQ Reference A+	Provides 18.2 MΩ.cm water
		BSL-173	15W Rm101-103	Water purification system	MilliQ Reference A+	Provides 18.2 MΩ.cm water
BSC @ 17W	Miscellaneous	BSL-185	17W Rm701-707	Washing Machine	Whirlpool HSCX90424	
BSC @ 17W	Miscellaneous	BSL-186	17W Rm701-707	Laundry Dryer	Whirlpool HSCX90424	

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Items require speical attendated Laboratory		Equipment no.	Location	Equipment name	Model no.	Equipment details
	Analytical instruments	LAP-001	9W Rm510A	Immunoassay analyzer	Millipore Luminex 200	96-well plate format, Detect up to 100 analytes per well, Detect and distinguish surface reporter fluorescence emissions at 575 mm on microsphere
		LAP-002	9W Rm510A	Multimode microplate reader	Thermo Varioskan Flash	Fluorometry: 6-1536 well plate; excitation: 200-1000 nm; emission: 270-840 nm Luminometry: 6-1536 well plate; 360-670 nm, spectral scanning 270-840 nm Photometry: 6-384 well plate; 200-1000 nm
		LAP-016	9W Rm510A	Capillary electrophoresis system	Beckman Coulter PA 800 Plus	Detector: UV, PDA, LIF Temperature control in sample storage and capillary Capacity: 48 vials x 2
		LAP-027	9W Rm510A	Multimode microplate reader	Molecular Devices SpectraMax iD5	Absorbance, Fluorescence, Luminescence, Time-Resolved Fluorescence detection Dual injectors Online and offline touch screen control
		LAP-028	9W Rm510A	Biomolecular Interaction Analyzer	ForteBio Octet RED96e	8 channels Measure 25 ng/mL to 2 mg/mL of IgG concentration in crude matrices Microfluidics-free Dip and Read™ format Sample plate cooling for temperature-sensitive proteins
	Chromatography & Mass Spectrometry	LAP-010	9W Rm510A	Fast protein liquid chromatography system	GE Health AKTA avant 150	Max. operating pressure up to 725 psi UV detection wavelength: 190-700 nm
		LAP-012	9W Rm510A	Liquid Chromatography Mass Spectrometry System - Triple Quadrupole/lon Trap	SCIEX QTRAP 5500	ESI & APCI ion source High sensitivity: down to PPB level Trap mode for analyte confirmation Autosampler handles up to 576 samples in 96-well plate
		LAP-020	9W Rm510A	Liquid chromatography mass spectrometry system - triple quadrupole/TOF	SCIEX TripleTOF 6600	30,000 resolving power in TOF MS/MS mode Q1 mass range up to 2250 m/z SWATH 2.0 2D nano-LC system
	Flam Cotamaton	LAP-019	9W Rm510A	Flow Cytometer - cell sorter	BD FACSAria Fusion	Diasers - 375, 405, 406, 501, 640 fifti Up to 14 colors detection With class II Type A2 biosafety cabinet
	Flow Cytometry	LAP-029	15W Rm101-103	Clinical Flow Cytometer	BD FACSLyric	Three lasers (Violet, Blue & Red), 10-color detection Universal loader supports 30- or 40-tube racks
		LAP-031	15W Rm101-103	Cytoflex Flow cytometer	Beckman Coulter Cytoflex	Three lasers (Violet, Blue & Red), 13-color detection Universal loader and plate reader supports 96-well samples loading
	Genomic Analysis	LAP-018-1	9W Rm510A	Genetic sequencer	Illumina NextSeq 500	High output: up to 120 Gb in 29 hrs (2 x 150 bp) Mid output: up to 39 Gb in 26 hrs (2 x 150 bp) > 75% bases higher than Q30 at 2 x 150 bp
		LAP-018-2	9W Rm510A	Bioanalyzer system	Agilent 2100 Bioanalyzer	Chip based system Minimal sample consumption (1-4 μ L)
		LAP-018-3	9W Rm510A	Focused-ultrasonicator	Covaris M220	Generate fragment sizes between 150 and 5,000 bp
LAP Advanced equipment		LAP-023	9W Rm510A	Genetic sequencer	Illumina MiSeq	Up to 15 Gb in 56hrs (2 x 300 bp) > 70% bases higher than Q30 at 2 x 300 bp
		LAP-025	9W Rm510A	Digital PCR	Bio-Rad QX200	Droplet based Up to 96 samples per run TaqMan Hydrolysis Probe and EvaGreen Assay
	Imaging & Microscopy	LAP-003	9W Rm510A	Fully automated inverted fluorescence microscope	Leica DMI6000 B (with CO2 incubator)	Support bright field, phase contrast, DIC Available fluorescence filter: Red (Cy3), Green (FITC), Blue (DAPI), YFP, CFP SIM - produce confocal-like images Max. magnification: 1200X
		LAP-004-1	9W Rm510A	Fully automated upright fluorescence microscope	Leica DM6000 B	Support bright field, phase contrast, DIC Available fluorescence filter: Red (Cy3), Green (FITC), Blue (DAPI), YFP, CFP High resolution color camera Max. magnification: 1000X
		LAP-004-2	9W Rm510A	Inverted fluorescence microscope	Leica DMI3000 B (with perfusion system)	Support bright field, DIC, IMC, IPH Available fluorescence filter: Red (Cy3), Green (FITC), Blue (DAPI)
		LAP-021	9W Rm510A	Cell imaging reader	BioTek Cytation 5	4 Fluorescence channels - DAPI, GFP, RFP, Cy5 Objectives - 4X, 10X, 20X Sample format - well plate, slide, petri dish, flask
		LAP-022	9W Rm510A	Laser Scanning Confocal Microscope	Carl Zeiss LSM 880	2 PMT, 1 GaAsP, and 1 Airyscan detectors Confocal resolution down to 140 nm 6 laser lines - 405, 458, 488, 514, 561, 633 nm
		LAP-024	9W Rm510A	Confocal high content screening system	Molecular Devices ImageXpress Micro Confocal	Confocal imaging 5 fluorescence channels - DAPI, FITC, TRITC, Texas Red, Cy5 Objectives - 4X, 10X, 20X, 40X MetaXpress software analysis
	Incubators & Bioreactors	LAP-006	9W Rm510B	Incubator shaker (with refrigeration)	New Brunswick Innova 40R	Temp range: 15 °C below ambient to 80 °C (min. 4 °C) Speed range: 25-500 rpm
		LAP-013-3	11W Rm525A	Shaking carbon dioxide incubator	INFORS HT Multitron Pro	Max. capacity: 6 x 5 L Temp. range: 20 °C below ambient to 80 °C Speed range: 20-400 rpm With direct steam humidification
		LAP-026-1	11W Rm525A	Bioreactor - Mammalian culture	Sartorius Biostat B	Glass vessels or culture bag in rocker Temperature, pH, DO monitoring and control
		LAP-026-2	9W Rm510B	Bioreactor - Microbial culture	Sartorius Biostat B	Glass vessels Temperature, pH, DO monitoring and control
		LAP-030	9W Rm510B	Refrigerated shaking incubator	New Brunswick Innova 42R	Temp range: 20 oC below ambient to 80 oC (min. 4 oC) Speed range: 25-400 rpm
	Sample processing	LAP-014	11W Rm525B	Preparative freeze-drying system Preparative membrane ultrafiltration system	Millrock Magnum Sartorius SartoFlow Advanced	10 shelves, 20 sq ft area condenser capacity: 30 L Condensation rate: 20 L within 24 hours Filter area: 0.1-0.5 m², 0.7-2.1 m²
		LAP-015	9W Rm510A	r reparative membrane ultrafiltration system	Sartorius SartoFlow Advanced	With 10 L double jacket tank with sight glass