THE UNIVERSITY OF IOWA

CENTER FOR BIOCATALYSIS AND BIOPROCESSING
University of Iowa Research Park
2501 Crosspark Road, Suite C100 MTF
Coralville, Iowa 52241-3486
319-335-4900 *Fax* 319-335-4901
www.uiowa.edu/~biocat

CBB's Research and Process Development Laboratory (RPD) Equipment List

Table 1: List of Fermentors

Image	Working Volume (Lit)	Model	Typical Use/Comments
	1	DasGip	DASGIP Parallel Bioreactor Systems for process development with bacteria, yeasts and/or fungi allow for advanced process control and automation.
	2	Biostat B	A suite of eight highly instrumented and automated fermentors with complete data logging for process optimization.
	30	Biostat C Plus	A suite of 4 x 30-L fermentors. Good for process demonstration and optimization from 10 to 30-L scale, provides initial material for downstream process development
	75	Biostat D75	First step scale fermentor is highly automated usually used scale-up from flasks and pilot quantity production.
	100	Biostat D100	Used for scale up studies, for process consistency, provides sufficient material for product purification, with detailed records of process parameters.
	1,000	Biostat D1500	Largest fermentor at CBB, with complete paper trail, automatic pH control, oxygen supply, cascading DO control, glycol cooled jacket, solvent feeding systems

Table 2: List of Downstream Processing Equipment (Partial Listing)

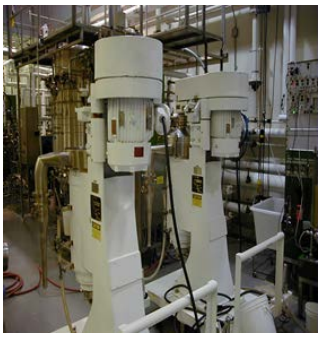
Image	Equipment	Model
 Buchi R153	Buchi R153 industrial rotary evaporator with 20 liter evaporation flask and 10 liter recovery flask.	Buchi 175 Buchi R153, 20-liter capacity Buchi R114,
 Microfluidizer M110	The M-110Y Microfluidizer Processor is a lab machine that provides the highest shear rates. Process pressures are highly variable ranging from a low of 1,500 to 23,000 psi, enabling the processing of a wide variety of fluids.	French Press Microfluidizer M110 and M-210-EH Dyno Mill
 Sharples AS-26	Sharples AS26 vertical centrifuge, stainless steel bowl, internal cooling coils and 5.3 liter bowl solids holding capacity	2 x Sharples AS-12
	Alfa Laval LAPX 404 offered is a high *g* force, high performance centrifugal clarifier designed for pilot plant, laboratory, small scale production and scale up capabilities.	Alfa Laval LAPX 404 Disc Stack Centrifuge

Image	Equipment	Model
 GE Flex Stand	CBB routinely uses both Hollow Fiber and Cassette TFF Systems	2 Millipore, Pelicon Tangential Flow Filtration, 2 Flexstand Systems, SRT-50 Filtration System, with micro-, ultra-, and diafiltration capabilities
 Akta Pilot	ÄKTA pilot is a benchtop process development and production system. The hygienic design, high level of automation, accuracy, reproducibility and reliable operation make ÄKTApilot the perfect system for scale up, process optimization and production.	GE Akta Purifer GE Akta Explorer GE Akta Pilot
 Virtis Freeze Dryer	Virtis Genesis freeze dryer, model 35El, stainless steel contact surfaces, (5) 11" wide x 20" deep shelves, NO stoppering, with condensor, vacuum pump, and external ice chamber.	Virtis SQ 35EL with computer controls
 Buchi Spray Dryer	The Buchi B-190 delivers tighter control of inlet air temperature and a lower maximum inlet temperature, which makes this unit well-suited to work involving heat-liable products. A secondary filter downstream of the cyclone separator extends the dryer's capabilities to more finely atomized sprays and valuable product.	Buchi B-190

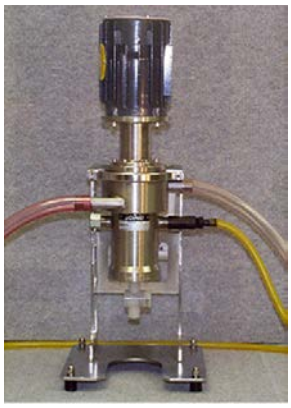
Image	Equipment	Model
 Octave 100	The Semba Octave™ Chromatography System is an automated liquid chromatography platform designed for preparative-scale purification of chemical and biological compounds. This bench top multicolumn system is capable of simulated moving bed chromatography (SMBC) protocols that increase productivity up to 20-fold vs. conventional single-column methods.	Octave 100
 Cinc VO2 Liquid-Liquid Centrifuge	The Model V02 Centrifuge has a 2.00" (5 cm) diameter rotor and is well suited for laboratory or pilot plant process development use. The self-priming design of the centrifuge will accept a wide variation in flow and can be pumped or gravity fed. The centrifuge performs a wide range of separation, extraction, washing and reaction operations	Cinc VO2 liquid-liquid centrifuge

Table 3: List of Analytical Equipment (Partial Listing)

Analytical Instrument	Model
High Performance Liquid Chromatography	Shimadzu HPLC
UV-VIS Spectrophotometer	Shimadzu 1600 UV
UV-VIS Spectrophotometer	Shimadzu 2100 UV
Metabolite Analyzer (Offline)	Analox MicroStat 8
Electrophoresis	Bio-Rad & Invitrogen
Batch Centrifuges	Beckman Optima XL-70, Sorvall Evolution RC and Beckman J2-MC
Fluorometer	Quantech
Gas Chromatography System	Shimadzu

Extensive analytical capabilities are supported through University of Iowa's other central research facilities such as Protein Structure Facility, NMR Facility, and Center for Advanced Drug Development