BD FACS Canto Flow Cytometer

Band: BD Bioscience (Becton and Dickinson and Company)

Model: BD FACSCanto™

Custodian: Sirapope Wongniam

Location: K635 Room, 6th Floor, Chaloemprakiet Building, Phyathai Campus

Description and Specifications:

- A patented optical design and manufacturer upgrades for simultaneous data acquisition of six fluorescent signals (FITC, PE, PerCP-Cy5.5, PE-Cy7, APC and APC-Cy7) and two scatter parameters (FSC and SSC).

- A novel sample injection system supporting carryover of less than 0.1%.

- High-speed data processing, industry-leading sensitivity (<50 MESF for PE and <100 MESF for FITC) and minimal sample-to-sample carryover make this instrument uniquely suited for rare event analysis.

- The capacity for eight-parameter detection on particle sizes from 0.5 to 50 mm in diameter.

- Reading more parameters per individual test decreases the total sample volume necessary for a specific project and the wide range of size detection enables projects with leukocytes, cell lines, platelets, bacteria, multiplexed bead technologies and beyond.

- The FACSCanto is built with blue (488 nm, 20 mW solid state) and red (633 nm, 17 mW HeNe) excitation sources.

- Digital electronics improve performance by eliminating dead time and the need for inter-beam time-delay calibration, this means the system can handle faster sample flow rates (up to 120 mL/min) and faster acquisition rates (up 10,000 events per sec).

- Data files are stored raw and compensated as part of the FCS files, allowing flexibility for off-line compensation when viewing data.

Cellular features measurable by Flow Cytometry:

• Intrinsic : size, shape, cytoplasmic granularity, autofluorescence and pigmentation

• Extrinsic : DNA content, DNA composition, DNA synthesis, cell cycle, chromatin structure, RNA, protein, sulphydryl groups, Antigens (surface, cytoplasmic & nuclear), lectin binding sites, cytoskeletal components, membrane structure (potential, permeability & fluidity), enzyme activity, endocytosis, surface charge, receptors, bound and free calcium, apoptosis, necrosis, pH, drug kinetics, etc.

Features:

• True 6-color capability — Get more information per cell from smaller sample volumes

• Sensitive (<50 MESF PE, <100 MESF FITC*) — Resolves the dimmest events

• Quick (10,000 events/sec) — Accelerates rare event acquisition

• Low carryover (<0.1%) — Minimizes sample contamination

• Uses 5 ml polystyrene round bottom tubes 12 x 75 mm style. BD Falcon Cat No. 352052

FACSCanto configuration				
Laser	Detector	Fluorochrome*	Filter**	Wavelength
488	FSC	Forward Scatter	--	--
488	A	PE-Cy7, PE-Alexa 750	780 / 60	750-810
488	B	PerCp-Cy5.5, PE-Cy5.5, PE-Alexa 700	695 / 40	>670
488	C	PE, Alexa 532, PI	575 / 26	564-606
488	D	FITC, CFSE, GFP, Alexa 488	530 / 30	515-545
488	E	Side Scatter	488 / 10	--
633	A	APC-Cy7	780 / 60	750-810
633	B	APC, Alexa 647, Cy5	660 / 20	650-670

* This is a list of fluorochromes commonly used on the FACSCanto. The list is not all-inclusive; other fluorochromes have the proper excitation and emission spectra to be used on this instrument. Keep in mind you can only choose one fluorochrome for each detector.

** Laser excitation and emission bandpass filter values are nanometer wavelengths.