

BD FACS Arialu:

The BD FACS Aria IIu cell sorter is a highly flexible flow cytometry platform that enables the identification and collection of cells from complex mixtures (spleen, bone marrow, blood, mixed cell cultures) at several pressures and speeds depending sample requirements.

The instrument has 11 fluorescent detectors, 5 of which are dedicated to fluorophores excited at 488 nm (blue), plus three each at red (633 nm) and violet (405 nm) wavelengths.

The instrument is housed inside a class II, A2 biosafety cabinet for sorting of BSL-2 samples such as lentiviral infected cell lines, bacteria and infected/non-infected human samples.

Also, please refer to our page on Sample Preparation for Sorting and concentrate your samples according to the guidelines below.

Instrument Specifications					
Sort Set-ups					
Nozzle (μM)	70	85	100		
Pressure (PSI)	70 (high)	35 (medium)	30 (medium)	20 (low)	
Cell Type	Splenocytes Thymocytes PBMC whole blood bacteria yeast bone marrow	B/T cell lines Embryonic Stem Cells Transduced/Transfected spleen, thymus bone marrow (delicate) cells	Embryonic stem cells Trophoblast stem cells Cultured primary cells	Endothelial cells All adherent cell lines Newly transfected cells Large delicate primary cells*	
Cell Concentration**	40 million/mL	10 – 15 million/mL	8 million/mL	3-5 million/mL (Bulk sorts)	1 million/mL (plate sorts)
Threshold Rate	$18 - 22 \times 10^5$ cells/sec	~ 8,000 events/sec	~6,000 events/sec	~3,000 events/sec	~500 – 1000 Events/sec
Optimal Injection speed***	20-35 $\mu\text{L}/\text{min}$				

Sample Injection and Collection Set-Up			
Set-Up	Tubes	Sorting Pools	Operating Temperature
Injection	12 x 75 mm (5mL) 15 (mL) conical		Room Temperature 4 degrees 24 degrees 37 degrees
Collection	Eppendorf tubes 12 x 75 mm (5mL)	4 – way sorting	Collection device is attached to variable temperature controlled water bath.
	15 mL conical	2 – way sorting	
	Multi-well plates (96, 48, 24, 6)	1-way sorting	Sorting into multi-well plates is performed at room temperature.

BD FACS Arialu:

	Glass slides Chamber slides		
--	--------------------------------	--	--

Notes:

* Large delicate cells may not always do well when sorted on the Aria. If cells are extremely fragile, consider speaking with an operator about sorting your samples with the BD Influx.

**Cell Concentration – values given are a maximum concentration – concentrations higher than this will require dilution and increased sorting time.

*** Injection speed is dependent on actual cell concentration. At 30 $\mu\text{L}/\text{min}$ the instrument will finish 1mL of sample in 35 minutes. If samples are too concentrated, the injection speed may be decreased or the sample may be diluted to achieve good sorting efficiency.

**** The 600/20 filter for the violet detector array can be interchanged with the 660/40 filter for additional colour detection

U of T Faculty of Medicine Flow Cytometry Facility