

Automation of the Micronucleus Assay Using Imaging Flow Cytometry and Artificial Intelligence

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Materials

Name	Company	Catalog Number	Comments
15 mL centrifuge tube	Falcon	352096	
Cleanser - Coulter Clenz	Beckman Coulter	8546931	Fill container with 200 mL of Cleanser. https://www.beckmancoulter.com/wsrportal/page/itemDetails?itemNumber=8546931#2/10/0/25/1/0/asc/2/8546931///0/1/0/
Colchicine	MilliporeSigma	64-86-8	
Corning bottle-top vacuum filter	MilliporeSigma	CLS430769	0.22 µm filter, 500 mL bottle
Cytochalasin B	MilliporeSigma	14930-96-2	5 mg bottle
Debubbler - 70% Isopropanol	MilliporeSigma	1.3704	Fill container with 200 mL of Debubbler. http://www.emdmillipore.com/US/en/product/2-Propanol-70%25-%28V%2FV%29-0.1-%C2%B5m-filtred,MDA_CHEM-137040?ReferrerURL=https%3A%2F%2Fwww.google.com%2F
Dimethyl Sulfoxide (DMSO)	MilliporeSigma	67-68-5	
Dulbecco's Phosphate Buffered Saline 1X	EMD Millipore	BSS-1006-B	PBS Ca ⁺⁺ MG ⁺⁺ Free
Fetal Bovine Serum	HyClone	SH30071.03	
Formaldehyde, 10%, methanol free, Ultra Pure	Polysciences, Inc.	04018	This is what is used for the 4% and 1% Formalin. CAUTION: Formalin/ Formaldehyde toxic by inhalation and if swallowed. Irritating to the eyes, respiratory systems and skin. May cause sensitization by inhalation or skin contact. Risk of serious damage to eyes. Potential cancer hazard. http://www.polysciences.com/default/catalog-products/life-sciences/histology-microscopy/fixatives/

			formaldehydes/formaldehyde-10-methanol-free-pure/
Guava Muse Cell Analyzer	Luminex	0500-3115	A standard configuration Guava Muse Cell Analyzer was used.
Hoechst 33342	Thermo Fisher	H3570	10 mg/mL solution
Mannitol	MilliporeSigma	69-65-8	
MEM Non-Essential Amino Acids 100X	HyClone	SH30238.01	
MIFC - ImageStreamX Mark II	Luminex, a DiaSorin company	100220	A 2 camera ImageStreamX Mark II eqiped with the 405 nm, 488 nm, and 642 nm lasers was used.
MIFC analysis software - IDEAS	Luminex, a DiaSorin company	100220	"Image analysis software" The companion software to the MIFC (ImageStreamX MKII)
MIFC software - INSPIRE	Luminex, a DiaSorin company	100220	"Image acquisition software" This is the software that runs the MIFC (ImageStreamX MKII)
Amnis AI software	Luminex, a DiaSorin company	100221	"AI software" This is the software that permits the creation of artificial intelligence models to analyze data
Mitomycin C	MilliporeSigma	50-07-7	
NEAA Mixture 100x	Lonza BioWhittaker	13-114E	
Penicillin/Streptomycin/Glutamine solution 100X	Gibco	15070063	
Potassium Chloride (KCl)	MilliporeSigma	P9541	
Rinse - Ultrapure water or deionized water	NA	NA	Use any ultrapure water or deionized water. Fill container with 900 mL of Rinse.
RNase	MilliporeSigma	9001-99-4	
RPMI-1640 Medium 1x	HyClone	SH30027.01	
Sheath - PBS	MilliporeSigma	BSS-1006-B	This is the same as Dulbecco's Phosphate Buffered Saline 1x Ca ⁺ + MG ⁺⁺ free. Fill container with 900 mL of Sheath.
Sterile water	HyClone	SH30529.01	
Sterilizer - 0.4%–0.7% Hypochlorite	VWR	JT9416-1	This is assentually 10% Clorox bleach that can be made by deluting Clorox bleach with water. Fill container with 200 mL of Sterilizer.
T25 flask	Falcon	353109	
T75 flask	Falcon	353136	
TK6 cells	MilliporeSigma	95111735	