Automation of the in vitro micronucleus assay for genetic toxicology testing on the Image Stream imaging flow cytometer

Matthew A Rodrigues

MilliporeSigma, Seattle, USA

e in, i mic n, cle (MN) a a mache a ell-e abli hed me h d f e al a ing gen ici MN i made f m h le ch m me ch m me fagmen ha lag behind d ing he me a ha e-ana ha e an i i n and a e e cl ded f m he m n, clei f ll ing ka kine i. e e ence f MN indica e ch m mal m a i n and hei an i ca i n i ed a an end in in gen ici e ing. Man al mic c ki i ki i lab i i, i h l h gh, and in e - c e a iabili being f a ic, la c nce n. A ma ed me h d incl ding lide-canning mic c ki and adi i nal cki me ki a ed e l ed b he e me h d e f m limi a i n incl ding lide-canning mic c ki and adi i nal cki me ki a ed e l ed b he e me h d e f m limi a i n incl ding lack f cki la mic i ali a i n (lide canning mic c ki) and he ef e he inabili i i alki c n m he legi imack f MN (cki me ki). e ImageS eam ki (ISX) imaging cki me e e e he en ial bea he e limi a i n beca e i c mbine he eed and a e e en ca e ca abili ki f c n en i nal cki me ki i h he high-e l i n e cen image ki b ained ki mic c ki A me h d e f m he in i MN a aki n he ISX ha been de el ed ing ell-kn n ane gen and cla gen High-e l i n image ki f mic n, clea ed bin, clea ed cell a e - en ca ed and a ma icalki iden i ed and en me a ed - a e ha acc m anie he ISX all ing he e al a i n f gen - and cki ici ki De ail de c ibing he e en f he ISX-ba ed in i MN a aki a e g ing be e en ed. e high h gh na e f he ISX e c me mank f he challenge in lideba ed mic c ki and c n en i nal cki me kechni e . Signi can ki me ecell can be c llec ed and c ed c ma ed mic c c ba ed, e i n f he a aki m ing he a i ical b ne f he me h d. Addi i nalki all c llec ed image ki a e en ed ind e eci c da a le e e e l e en he imaki e a d he e en fa alkia ma ed a ach f e f ming he in i MN a aki a e cki ici kand gen ici ki ing imaging cki me ki

An mbe f me h d ha e been de el ed e f m he in i MN a a Each f he e ha ad an age and limi a i n c nce ning h gh, acc ac and i al c n ma i n f MN. e a a i m c mm n e f med h gh man al e cen mic c thich ha he bene f i al c n ma i n f MN; h e e, hi me h di imec n ming and ne c e bjec i thank b h in e c e a iabilitation and fa ig e hen man and am le m be c ed 18 A ma ed mic c the me h d a e de el ed ing - a e alg i hm ha a e ead iden if and ca e image f e cen la labeled n clei and MN 19, 20, 21, 22. While he e a ma'ed me h d em e he edi na e f man al lide c ing,

Note: This work is partly presented at 16th Global Summit on Toxicology & Applied Pharmacology October on 15-16, 2018 held at Las Vegas, USA