

XYClone[®]

Somatic Cell Nuclear Transfer

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The XYClone laser has been of huge benefit to developing our technique of human somatic cell nuclear transfer. Prior to using the XYClone we were relying on traditional enucleation procedures to remove the genetic material from human oocytes. This generally requires piercing through the elastic outer protein shell of the egg by using a microscopic beveled glass pipette, which often induced damage and resulted in lysis of the egg. The elasticity of the human zona pellucida compared with other species remained a challenge. However, following installation of the XYClone laser objective, we have been able to speed the process of enucleation to a matter of seconds, without eliciting damage to the egg. The XYClone laser suitably makes a very small, neat slit in the zona pellucida which facilitates the DNA removal. We have been very impressed by how it has dramatically improved our enucleation efficiency and reduced the lysis rates of the eggs. It has also been incredibly easy to operate and we love how easy it is to target the site of interest using the software provided. It appears to be an extremely powerful tool that has improved our ability to create human cloned embryos for the purposes of deriving patient specific stem cell lines which may one day be used to treat non-curable diseases.