

## Embryo Splitting

Embryo splitting remains the most effective and rapid method of increasing the number of offspring obtained from an embryo transfer program.

Under suitable conditions, embryo splitting can significantly increase the number of live offspring obtained from an embryo transfer program. In addition to maximizing returns from valuable donors, embryo splitting can overcome the problem of having insufficient embryos for full recipient utilization. Using the **AB Technology Twinner System**, embryos can be quickly and safely split

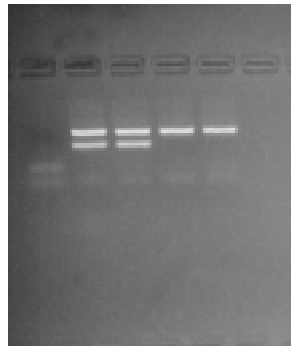
into identical halves, or “demi-embryos,” which can then be transferred either singly or as twins to normal recipient females. The Twinner is a precise system, which enables trained operators to quickly and accurately perform bisections on both morula and blastocyst stage embryos without the need for a holding pipette. Experienced operators can readily perform up to 30 bisections an hour. The development of the Twinner system by AB Technology means that embryo splitting is now a commercially profitable technology for veterinarians and livestock producers alike.

## Embryo Sexing

AB Technology’s exclusive **YCD™** embryo sexing assay enables trained operators to quickly and accurately determine the sex of caprine/bovine embryos before they are transferred to recipients.

The result of more than a decade of research, this cutting edge technology has obvious advantages for livestock producers. Research has shown that when used in conjunction with conventional embryo transfer programs, the use of embryo sexing allows producers to concentrate their genetic improvement on their superior male or female lines. Apart from helping to increase the rate of genetic gain and thus productivity, embryo sexing enables producers to dramatically reduce the overall cost of embryo transfer by eliminating 50% of recipients.

AB Technology’s YCD™ embryo sexing assay has been refined to a simple eight-step diagnostic procedure, which takes less than 2 hours to complete.



*continued*

Embryo  
Splitting  
& Sexing

Embryo  
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## Embryo Sexing, *continued*

A small number of cells are removed from a seven-day-old embryo using AB Technology's Twinner system. This biopsy is then tested for the presence of the Y-chromosome using a DNA amplification process called Polymerase Chain Reaction (PCR). AB Technology holds an international patent on this process.

Everything needed to perform embryo sexing under commercial conditions, including the Twinner embryo splitting system, and related hardware and consumables is available from ABT. AB Technology's experienced technical staff conducts comprehensive five-day embryo splitting & sexing training courses. As with all AB Technology products, full technical support is provided.

## Twiner System

### Portable Embryo Splitting

The Twinner System consists of a high-quality inverted microscope and an electronically controlled micromanipulator, which holds an ultra-sharp splitting blade. The micromanipulator has both electric and precise manual X-, Y- and Z-axis control. The electronic movement is controlled by a variable speed joystick, which permits motion in all three axes simultaneously.

The advanced Olympus CKX-41 inverted microscope provides brilliant, high-contrast images of the embryo and the splitting instrument. The 4, 10, and 20x magnification objectives permit accurate morphological assessments of embryos, while the powerful built-in illuminator provides a bright and uniform light without harming the embryo.



Despite its "high-tech" nature, the Twinner System is completely portable. A full range of accessories is available, including fittings for video or photographic systems.



## YCD™

### Y Chromosome Determinant

YCD™ is a commercially proven reagent for embryo sexing and is a vital ingredient in AB Technology's embryo sexing assay. YCD™ has made embryo sexing a practical and affordable method of genetic improvement. Used in conjunction with the Twinner and Quick-TEST systems, this cost effective reagent turns embryo sexing into a simple, eight step procedure which can be completed in less than two hours.

YCD™ is supplied in a ready to use formulation, designed for use in a DNA amplifier. Each batch is pre-tested to ensure complete efficacy. It is manufactured with an expectation of 95% accuracy. YCD™ is conveniently packaged in 3, 4, 5, and 10 assay vials.

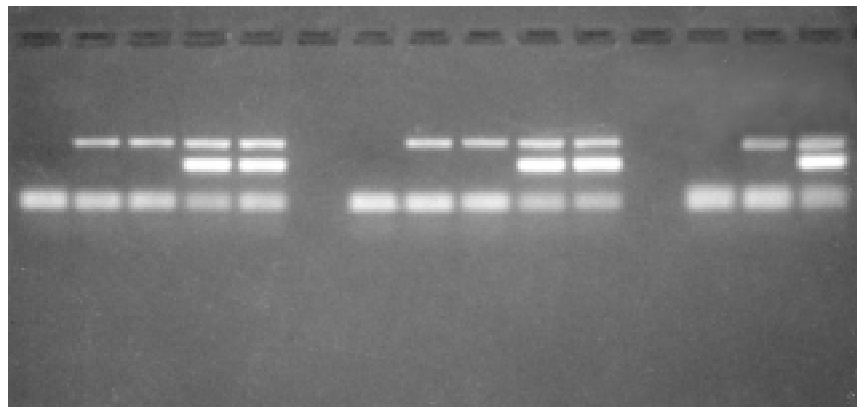
## Quick-TEST System

### Portable Embryo Sex Determination

The Quick-TEST system contains the four components needed to quickly and accurately conduct AB Technology's embryo sexing assay.

This competitively priced system is portable and consists of a high quality DNA amplifier, a gel electrophoresis unit, an ultra-violet light source and a photographic recording system. Each component has been specifically selected for its suitability for use in AB Technology's embryo sexing assay, its durability, and its compactness.

The equipment used in the assay is completely portable, allowing the operators to provide this valuable breeding tool as part of their normal "on-site" service.





## Training Courses

Each course is designed to provide the participants with a thorough theoretical and practical understanding of the subject. Strong emphasis is placed on personalized “hands-on” instruction from our highly qualified instructors. A complete technical manual is presented with each course.

Training courses are generally held at AB Technology's modern laboratory in Pullman, Washington. Courses can be held at other locations by special arrangement. The length of each course can be varied to suit the experience of the participants.

### ***Embryo Splitting***

This intensive **two-day course** covers:

- Theory of embryo splitting
- Selection and maintenance of equipment
- Preparation of materials
- Practical training in embryo splitting and biopsy
- Economic considerations

### ***Embryo Splitting & Sexing***

This intensive **five-day course** covers all of the Embryo Splitting material as well as:

- Theory and practical training in embryo biopsy and sexing
- Theory of Polymerase Chain Reaction (PCR)
- Selection and maintenance of equipment
- Practical aspects of laboratory design
- Practical training in PCR and gel electrophoresis
- Freezing sexed embryos



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