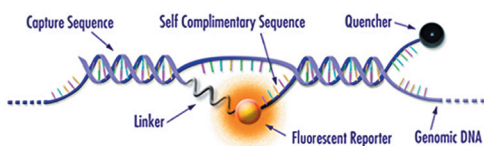
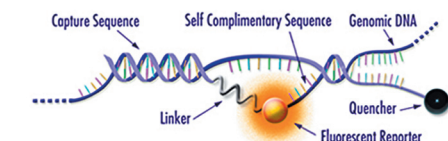
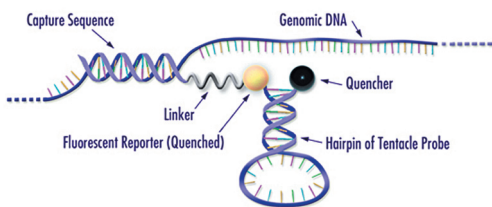
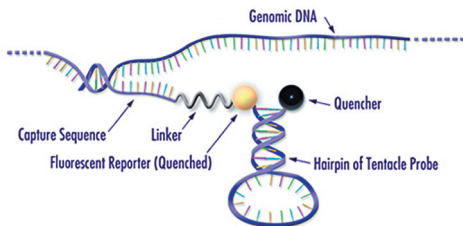
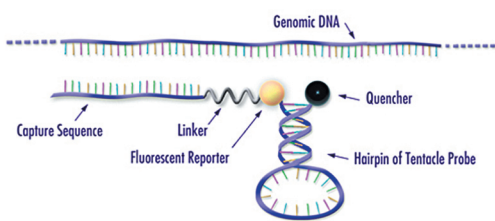


# Arcxis Biotechnologies® Custom Services\*

Arcxis Biotechnologies Assay Development Delivers Unparalleled Accuracy. On Time. In Budget.

As with all diagnostic tests, both **maximum sensitivity** and **target specificity** is the ideal. Through Arcxis Biotechnologies' patented Tentacle Probes® technology, the ideal has been realized. Sensitivity probes effectively grasp all nuclear material present in the sample, acting as a highly effective nucleotide adhesive. Simultaneously, specificity probes act to capture only the specifically targeted nuclear material sought. These two symbiotic steps act in concert to provide unmatched analytical performance.



Tentacle Probes incorporate three separate regions. Each region confers different properties. One region is a hairpin structure similar to molecular beacons for enhanced specificity, but it is modified by the addition of a capture probe for increased kinetics and affinity. Tentacle Probes produce kinetic rate constants up to 200-fold faster than molecular beacons with corresponding stem strengths.

The Capture Sequence of the Tentacle Probe, usually 15-20 base pairs in length, is designed to bind to the target part of the genomic DNA. The fluorescent reporter is held in close proximity to the non-fluorescent quencher by the self complimentary part of the Tentacle Probe hairpin and is therefore inhibited from emitting light.

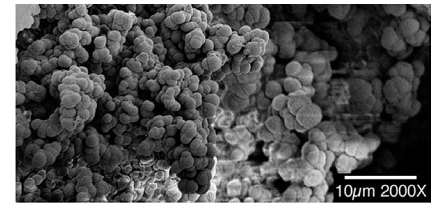
Complete binding of the capture sequence to the genomic DNA places the self complimentary part of the Tentacle Probe hairpin next to a downstream sequence of the genomic DNA.

The hairpin of the Tentacle Probe contains a loop of sequence that is complimentary to the target sequence by approximately 15-18 base pairs which is enough to disrupt the self complimentary sequence of 6-9 base pairs and start to bind to the genomic DNA.

A perfect match will result in the self complimentary part of the hairpin dissociating completely and the probe will fluoresce since the reporter and non-fluorescent quencher are no longer in close proximity.

## Tentacle Probes Technology Delivers:

- Dual Probe Efficiency
- Comprehensive Nucleotide Sensitivity
- Optimized Target Specificity



porous polymer monolith (PPM) filter

**Porous Polymer Monolith (PPM)** is the principal technology behind Arcxis Biotechnologies nucleic acid concentrators. This uniquely effective filtration design has demonstrated impressive results when employed in test tubes, syringes and spin columns alike.

Custom assay development services, utilizing proprietary Arcxis Biotechnologies materials and techniques are now available to diagnostic and life science OEMs.



# Arcxis Biotechnologies Commissioned Microfluidics Design



**Microfluidics** have long promised to streamline costs and time to result, but have struggled with the challenges of effective mixing, optimal target binding and cost of manufacture. Through expertise and patented methodologies, Arcxis Biotechnologies has put the promise into practice. Robust and compact polymer-based consumable cartridges that effectively support each step from sample preparation through results reporting are now available at a fraction of the price of glass alternatives.

## Custom Multi-Layer Disposable Medical Device Development & Manufacture

### Flash-Free Full Channel Designs

- Intricate Laser Welding
- Cutting, Annealing, Embossing
- Vapor Polishing
- Micromachining
- Injection Molding



## Diverse Polymer Build Capabilities Including:

- PPMA
- PEI
- PC
- PI
- COP
- ABS
- COC
- ETC
- PP

Arcxis Biotechnologies Delivers Cost-Efficient  
Microfluidic Solutions Optimized for Your Chemistry

For more information,  
or a project quotation, contact  
Arcxis Biotechnologies:

Arcxis Biotechnologies® is a registered trademark of Arcxis Biotechnologies. Tentacle Probes® is a registered trademark of Arcxis Biotechnologies.

Copyright 2009 Arcxis Biotechnologies.  
All rights reserved.



**Arcxis Biotechnologies**  
6920 Koll Center Parkway, Suite 215  
Pleasanton, CA 94566  
+1.925.461.1300  
www.arcxis.com