

# Chromovert<sup>®</sup> Produces Clones Stably and Functionally

## Expressing a Multigene Ion Channel

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### Abstract

Chromovert<sup>®</sup> is a technology for detecting multiple mRNAs in living cells using sequence-specific fluorogenic probes to report the presence of target RNAs. When hybridized to target sequences, probes undergo spontaneous fluorogenic conformational changes, separating fluorophores from the vicinity of quenchers resulting in detectable fluorescent signals at defined wavelengths. Multiple probes incorporating different fluorophores, each directed against a different target RNA, are simultaneously resolved using flow cytometry.

Using Chromovert we isolated multiple clones triple positive for a heterotrimeric ion channel. As expected the functional ion channel is toxic unless cells are maintained in optimized media.

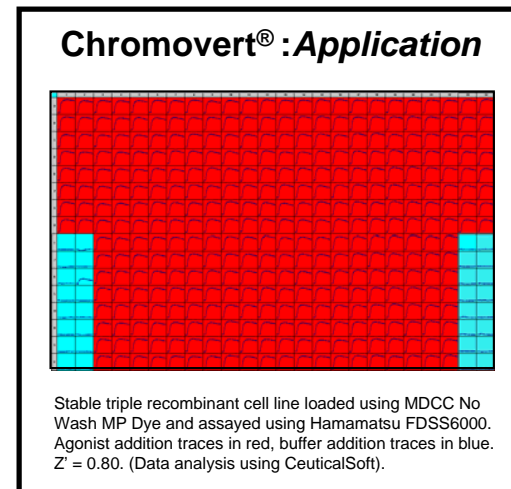
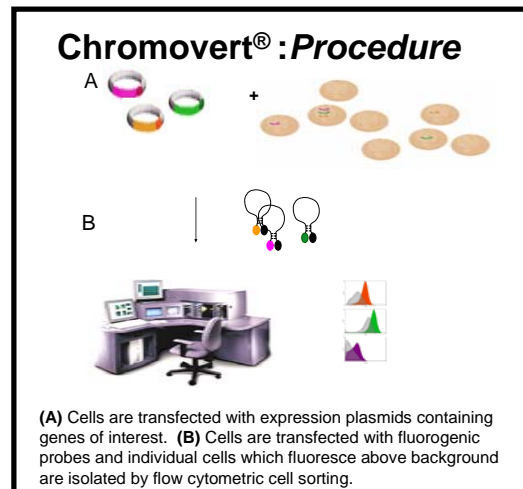
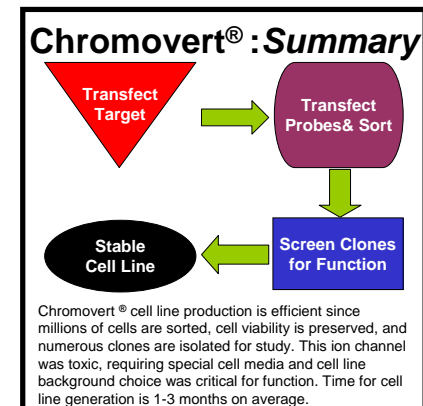
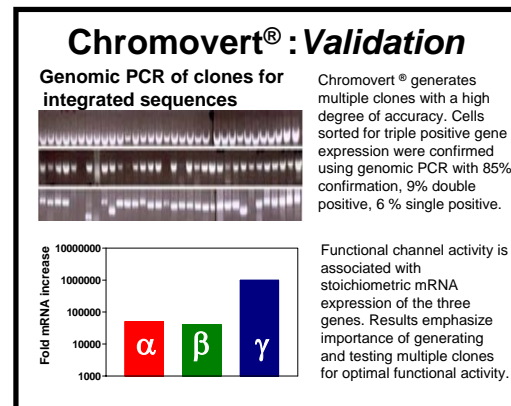
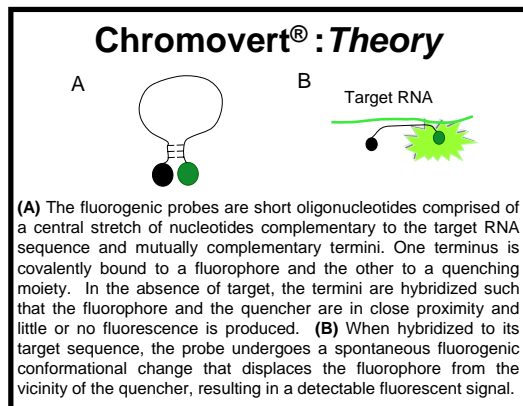
Interestingly, specific mRNA stoichiometry is associated with optimal functional activity.

Using the FDSS6000 platform the stable recombinant cell line consistently generates Z' of 0.8.

Conclusion: Chromovert produces a stable triple recombinant cell line suitable for quality high throughput screening.

### Introduction

Chromocell<sup>®</sup> has commercialized a proprietary technology, Chromovert<sup>®</sup>, enabling the rapid production of high quality stable cell lines facilitating robust cell-based assays and improved antibody production. A key feature of Chromovert is the ability to analyze individual living cells without compromising cell viability. Millions of cells are analyzed and multigene cells, expressing target RNA (triple positive), are isolated by cell sorting. Here we use Chromovert to build and then validate a stable, functional three-subunit constitutive ion channel cell line.



### Conclusions:

1. Chromovert<sup>®</sup> technology generates multigene clones.
2. Optimal functional activity is associated with mRNA stoichiometry and appropriate cell background.
3. Ion channel was toxic to cells unless grown in special media.
4. Clones are stable for months.
5. Functional assays are robust with Z' = 0.80.

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