

# New Technologies

## ...from Chimera Biotec & Biotium\*

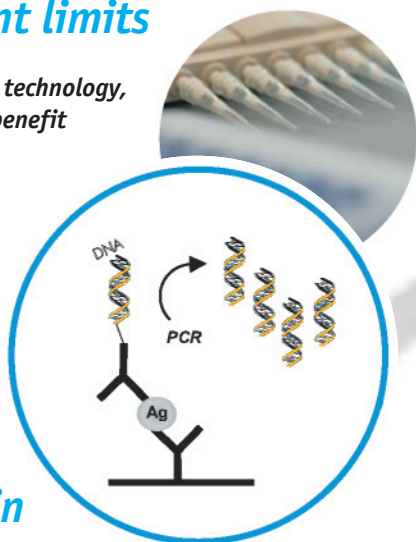
### 2005

#### IMPERACER Protein Detection, Conjugates and Kits, EvaGreen™ fluorescent DNA dye...

### IMPERACER technology means Protein detection beyond current limits

With Chimera Biotec's new technology, scientists and researchers benefit from an ultra-sensitive detection technology.

It improves existing ELISA through a "simple" exchange of the conventionally used enzyme by a DNA marker.



### Boost your protein detection...

- when handling small sample volumes or working with viral and bacterial low load infections
- when an assay beyond current detection limits is interesting for you, e.g. for pharmacokinetics and immunodiagnosics
- when small animals are required for your model studies to perform monitoring and kinetic studies under sparing conditions
- whenever you want to develop a detection method for your specific application.

\* Exclusively  
available by:

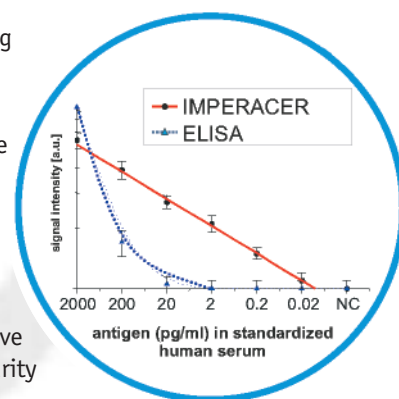
**BIO**  
**TREND**

BIOTREND Chemikalien GmbH  
Im Technologiezentrum Köln  
Eupener Str. 157 • D-50933 Cologne  
Tel. +49 (0) 221/9 49 83 20  
Fax. +49 (0) 221/9 49 83 25  
eMail: jaeger@biotrend.com

The IMPERACER technology combines the advantages of ELISA and PCR-based detection systems resulting in a 100 – 10,000 fold increase in sensitivity compared to that of conventional ELISA.

### IMPERACER overcomes current limitations in protein diagnostics:

- robust and easy handling
- cost-saving through small sample volumes and short hands-on time
- safe detection at lowest concentrations
- no loss in specificity
- transformation from qualitative to quantitative results with a wide linearity
- change to easily accessible matrices



### IMPERACER is easily adaptable to your target antigen:

- modular reagent design allows for the use of your given antibody in a highly sensitive test-kit

### Customer specific solutions

The key reagents of IMPERACER are conjugates of antibodies and DNA marker fragments. These conjugates can be used as species-specific secondary reagents binding to your specific detection antibody, or, as custom-made conjugates including your specific antibody. The applicability of this technology was impressively shown in many applications.

IMPERACER is moreover well proven with a variety of targets and matrices, e.g. serum, feces, saliva, urine and tissue homogenate. This demonstrates the robustness and reproducibility of this new technology.

The combination of these benefits allows to overcome numerous challenges in protein detection that may have limited your success in the past. Explain your Challenge. We will solve it!

# EvaGreen™ is the superior Dye alternative for qPCR

*We know  
that you have been looking  
hard for an alternative.  
Now look no further.  
EvaGreen™ is not just another  
Competitor Dye, it is simply  
the best green fluorescent  
DNA dye for qPCR.*

Biotium in collaboration with AlleLogic Biosciences Corp. has developed EvaGreen™ as a superior fluorescent DNA stain for quantitative real-time PCR (qPCR). EvaGreen™ is truly a remarkable dye in many aspects. Upon binding to DNA, the fluorescence of EvaGreen™ is several-fold higher than that of Competitor Dye while EvaGreen™ shows very little inhibition to the PCR process.

Unlike Competitor Dye, which has been reported to be unstable, EvaGreen™ is highly robust, both thermally and hydrolytically under alkaline or acidic condition. In addition, the absorption and emission spectra of EvaGreen™ are similar to those of Competitor Dye or FAM, which means that the same optical setting for Competitor Dye can also be used for EvaGreen™.

**We now offer two EvaGreen™ products:**

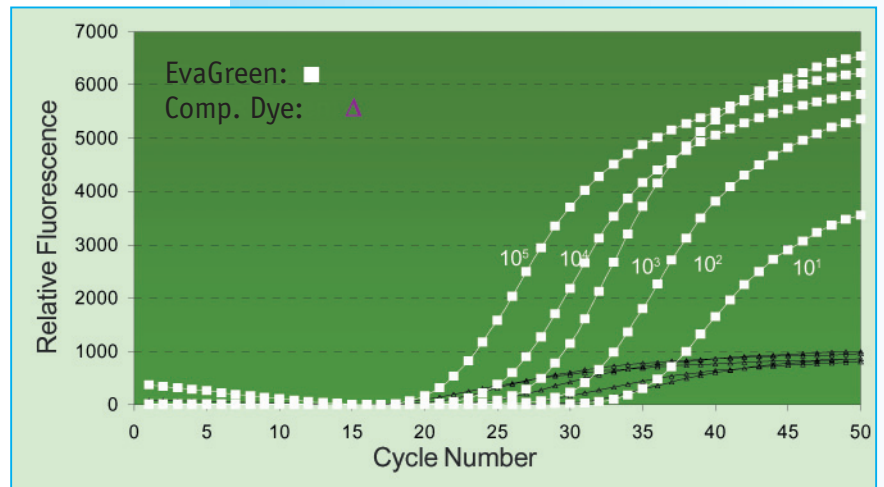
**EvaGreen™  
at 20 x concentration (#31000)**

**EvaGreen™ qPCR Basic Mix  
at 2 x concentration (#31001)**

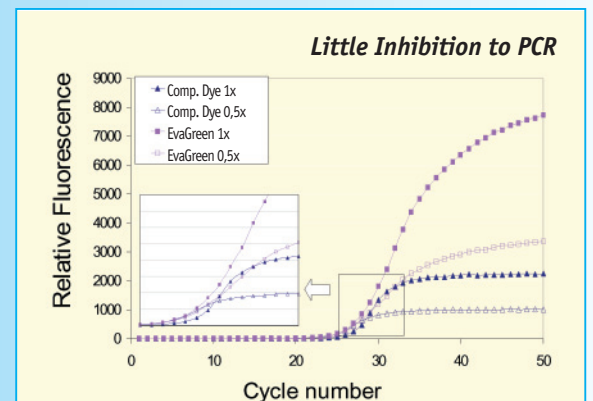
The Basic Mix contains everything you need to run a qPCR except for the Taq enzyme.

We will soon offer **EvaGreen™ qPCR Master Mix**, which contains all necessary components for qPCR.

## EvaGreen™ vs. Competitor Dye: - the difference is black and white



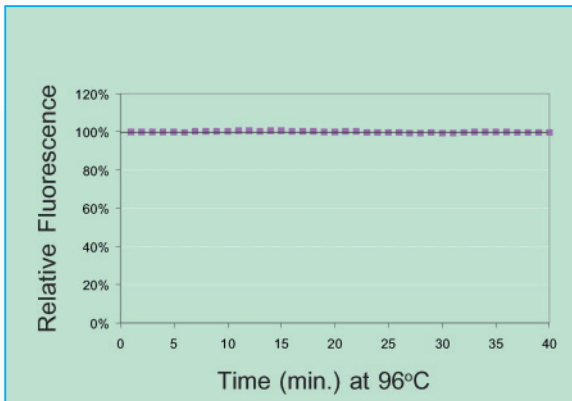
**Figure 1. PCR kinetic plots using EvaGreen™ (white square) and Competitor Dye (black triangle), respectively, in titration of human genomic DNA.**



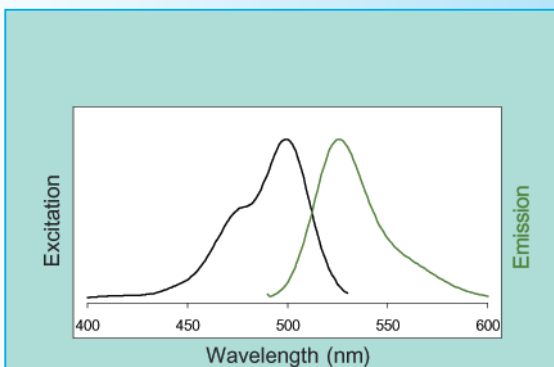
**Figure 2. PCR amplification plots using EvaGreen™ and Competitor Dye at two different concentrations. Competitor Dye exhibits significant PCR inhibition at 1x concentration (OD ~0.05) while EvaGreen™ does not (See inset).**



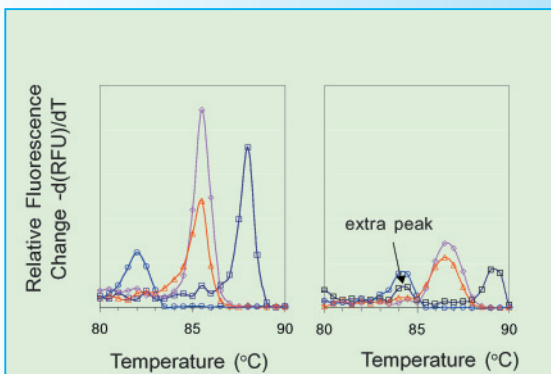
EvaGreen™ and its uses are covered by pending US and international patents.



**Figure 4. Stability of EvaGreen™ in the presence of DNA at 96°C. Fluorescence was recorded at 60°C and the Time axis represents total accumulated time at 96°C.**



**Figure 3. Excitation and emission spectra of EvaGreen™ in the presence of dsDNA in PBS buffer.**



**Figure 5. DNA melting curve analysis using EvaGreen™ and Competitor Dye, respectively, with 4 different amplicons: 1) TBP (--); 2) SDHA (--); 3) RPL4 (--); and 4) HMBS (--). Competitor Dye exhibits significant PCR inhibition, resulting in occasional formation of an extra melting peak.**

- **Very Little PCR inhibition**

Unlike Competitor Dye, EvaGreen™ shows very little PCR inhibition.

- **Highly bright fluorescence**

The fluorescence brightness of EvaGreen™ in qPCR is simply unmatched by that of Competitor Dye.

- **Superior stability**

Unlike Competitor Dye, which has been reported to be unstable<sup>1</sup>, EvaGreen™ is extremely stable.

- **Excellent compatibility**

Simply replace Competitor Dye with EvaGreen™. No need to change anything else in your existing formulation and instrument setting. The only difference you will see is a better performance.

1. Karsai, et al. *BioTechniques* 32(4), 790(2002);



EvaGreen™ products are available for end-users and authorized Biotium distributors only. Resales of the products and derivative products require a license from Biotium, Inc. or its co-developer AlleLogic Biosciences Corp. ([www.allelogic.com](http://www.allelogic.com)). We welcome partners who can help expand our marketing and technical capabilities.