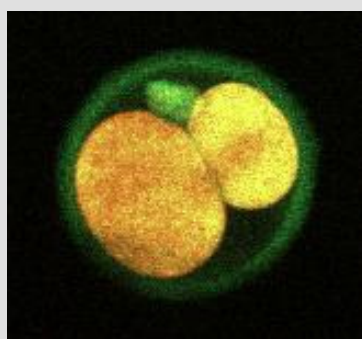
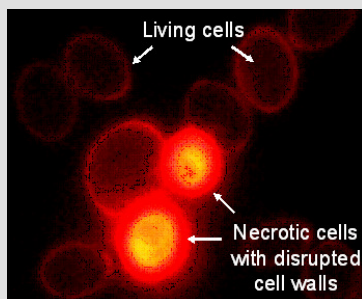


Fluorescent Probes and Labels for Biomedical Applications



Novel, proprietary **fluorescent probes and labels** of the **Seta**, **Square** and **SeTau** dye series that span the visible and near-infrared range for use in biological, biomedical and pharmaceutical research, clinical diagnostics and high-throughput screening.

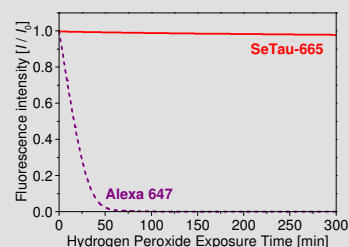
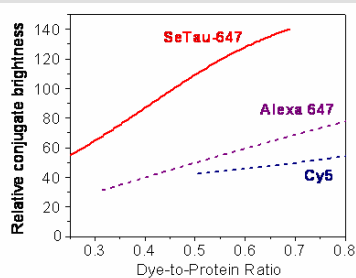
These markers are **the brightest and most stable dyes** currently available on the market and are replacements for the most common dye series such as **Alexa** or **Cy**.



Our products include:

- **Reactive visible and near-infrared (NIR) fluorescent labels** for covalent attachment to biomolecules (proteins, antibodies, amino-acids, peptides, oligonucleotides, DNA, RNA, etc.);
- **Fluorescent probes** for proteins, lipids, cholesterol, cells, and other large-molecular-weight biological species;
- **Fluorescence lifetime (FLT) probes and labels** for FLT and polarization based applications;
- **pH-sensitive fluorescent probes and labels** for micro-environmental sensing applications;
- Fluorescent probes and labels for **single molecule applications**;
- **Reactive dark quenchers** for Fluorescence Resonance Energy Transfer (FRET) applications;
- **Classification dyes** (hydrophobic fluorophores) for single or multiple encoding of microspheres used in High-throughput Screening (HTS).

Main Characteristics:

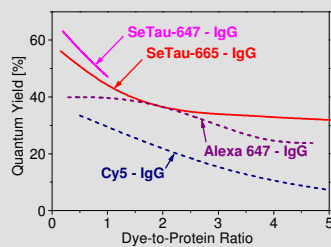
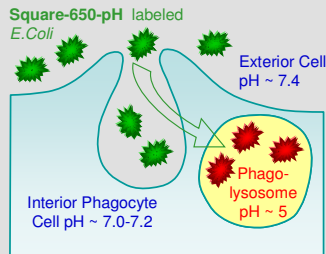
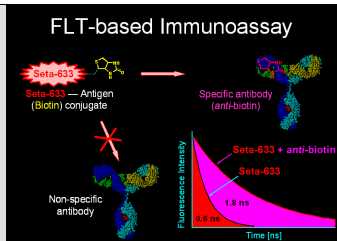


Wide spectral range. The new **Seta**, **Square** and **SeTau** dyes absorb and emit in the 350–850 nm spectral range. Unlike other commercially available dyes of the **Cy** and **Alexa** series, these red and NIR emitting markers can be excited not only with the red, 635-nm and 670-nm diode lasers but also with the blue, 370-nm or 405-nm lasers or light emitting diodes (LEDs).

Extremely bright. The red and NIR **Seta**, **Square** and **SeTau** dyes have high extinction coefficients (up to $370,000 \text{ M}^{-1}\text{cm}^{-1}$), quantum yields in water up to 60%, and protein conjugates of these labels are extremely bright (quantum yields up to 70% in aqueous buffer solution).

High stability. As compared to **Cy** or **Alexa** dyes **Seta**, **Square** and especially **SeTau** dyes exhibit much higher photostability and stability against oxidizers such as ozone and/or hydrogen peroxide.

Long fluorescence lifetimes. Some of the long-wavelength **Seta**, **Square** and **SeTau** dyes are also suitable tracers for lifetime (FLT) and polarization based assays. The lifetimes of these dyes are in the range of 500 ps to 3 ns. Dyes with longer FLTs up to 30 ns are also available.



Low blinking. The long-wavelength **Seta**, **Square** and **SeTau** dyes show low blinking effects and therefore are promising in single molecule applications.

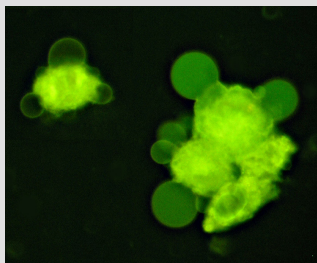
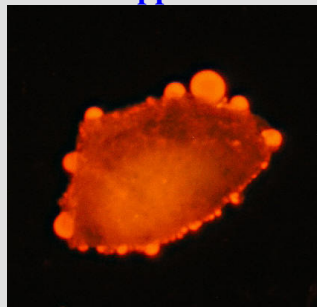
High sensitivity towards the microenvironment. Selected **Seta** and **Square** probes exhibit high affinity for proteins, biomembranes and lipoproteins and thus can be used for their detection and quantification.

pH-sensitivity in physiological range. Selected **Seta** and **Square** probes and labels display sensitivity in the physiological and acidic pH range and are useful for ratiometric measurements in membranes and cells. These dyes also show potential as pH probes to detect acidic organelles in eukaryotic cells.

Reactive dark quenchers. The newly developed reactive, dark quenchers of the **SQ** series absorbing in the 500–800 nm spectral range have several times higher extinction coefficients as Black Hole Quenchers, do not exhibit any residual fluorescence and are perfectly suited for covalent labeling of proteins, peptides and oligonucleotides for use in FRET and real-time PCR based applications.

We refer you to our website at <http://www.setabiomedicals.com> for more detailed information.

Areas of Application:



Seta, **Square** and **SeTau** dyes are utilized in fluorescence applications using intensity, polarization, Fluorescence Resonance Energy Transfer (FRET), or Fluorescence Lifetime (FLT) as a read-out parameter. Our fluorescent products are invaluable tools for applications in life sciences (**biology**, **medicine** and **pharmacology**).

More specific areas include:

- **Biological Imaging**
- **Flow Cytometry**
- **Immunology**
- **Drug Screening**
- **Cellular and Molecular Biology**
- **Proteomics**
- **Genomics**
- **High-throughput Screening**
- **Single Molecule Applications**
- **Photodynamic Therapy**
- **Clinical Diagnostics**

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