Stain Index for StarBright Blue Dyes
Quick Guide

StarBright™ Dyes are new, proprietary fluorescent nanoparticles conjugated to the Bio-Rad™ line of highly validated antibodies. StarBright Dye conjugated antibodies are designed to offer exceptional brightness, narrow excitation and emission, and stability with high lot-to-lot reproducibility.

This handy reference guide shows the stain index of StarBright Blue Dyes (SBB) compared to other blue laser–excitable fluorescent dyes with similar maximal emissions.
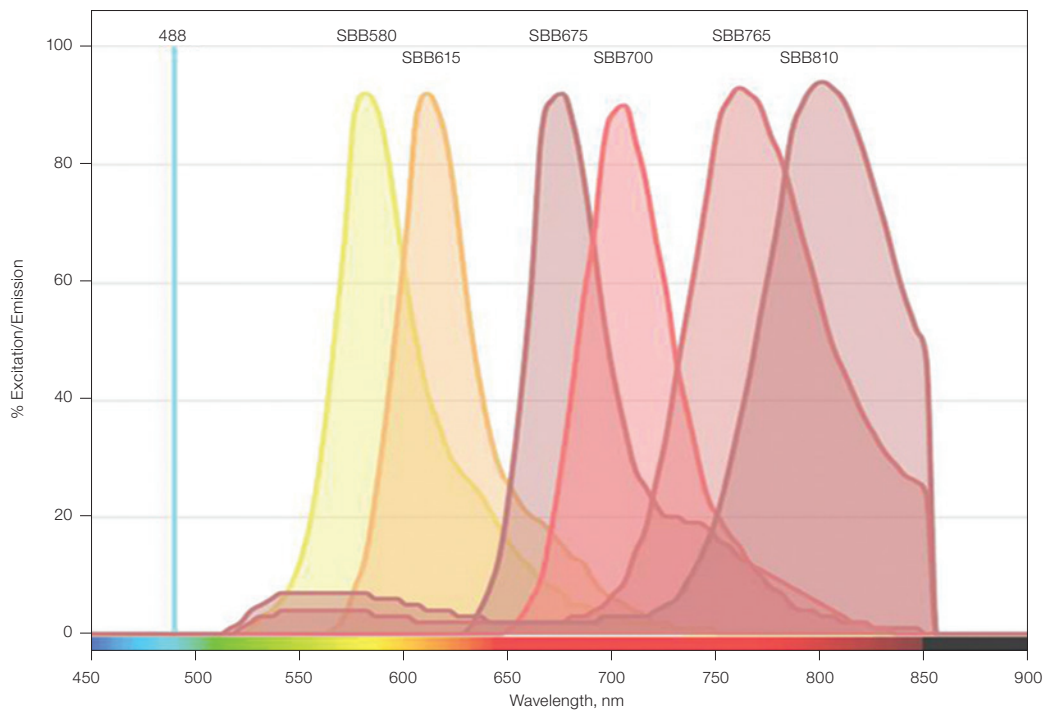

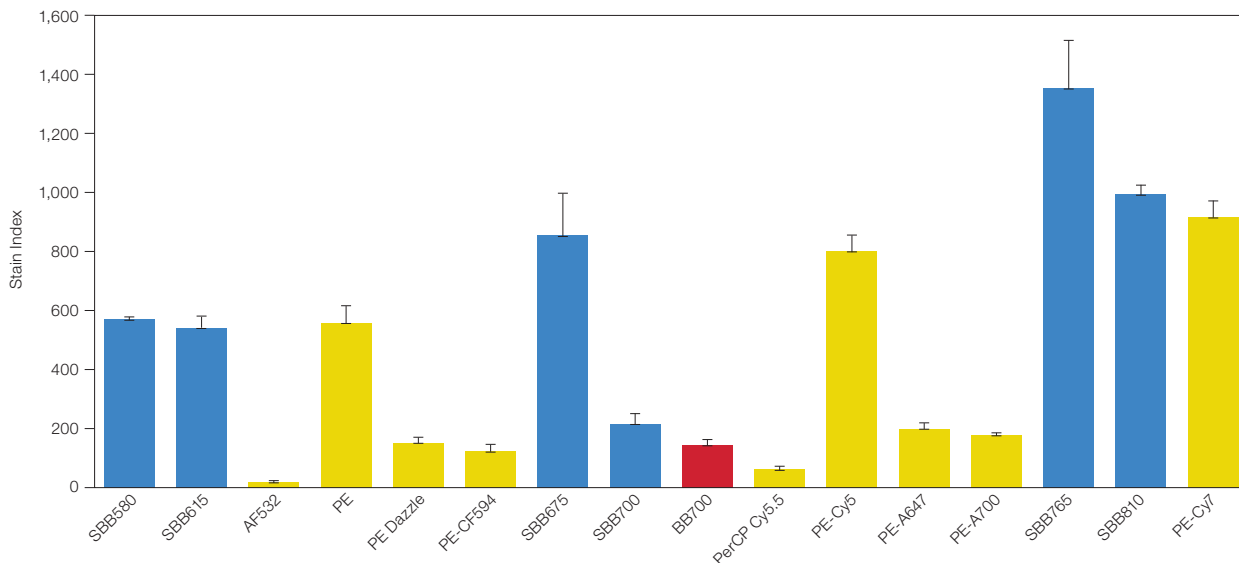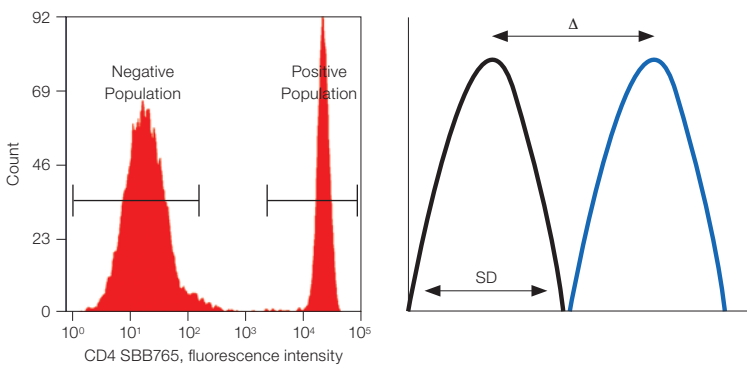Fig. 1. Excitation and emission spectra of StarBright Blue Dyes.

Visit **bio-rad-antibodies.com/stain-index** for more information.

Fig. 2. Stain index comparison of various 488 nm excitable dyes used to detect CD4 in human peripheral blood samples. StarBright Blue Dyes (■), Brilliant Blue (■), and conventional nonpolymer dyes (■) were conjugated to Mouse Anti-Human CD4 Antibody (Bio-Rad Laboratories, Inc., #MCA1267). Data shown are the average of three donors. Antibodies were titrated prior to use and analyzed on the ZE5 Cell Analyzer. AF, Alexa Fluor; BB, Brilliant Blue; Cy, cyanine dye; PE, phycoerythrin; PerCP, peridinin chlorophyll protein; SBB, StarBright Blue Dye.

How to Generate a Stain Index (SI)

A stain index is a method to calculate the relative brightness of a fluorescent dye on a particular instrument. It is defined as the difference (delta) between the mean fluorescent intensity (MFI) of the positive population (blue) and the negative population (black), divided by two times the standard deviation (SD) of the negative population. A titration of antibody followed by the SI calculation can determine the optimal amount of antibody to use in your experiments.

$$SI = \frac{(MFI_{pos}) - (MFI_{neg})}{2 \times SD_{neg}} \qquad \frac{17{,}923.8 - 10.4}{2 \times 14.9} = 601$$

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