BOC Sciences®
Fluorescent Probe & Fluorescent Dye

Fluorescent Probes & Dyes

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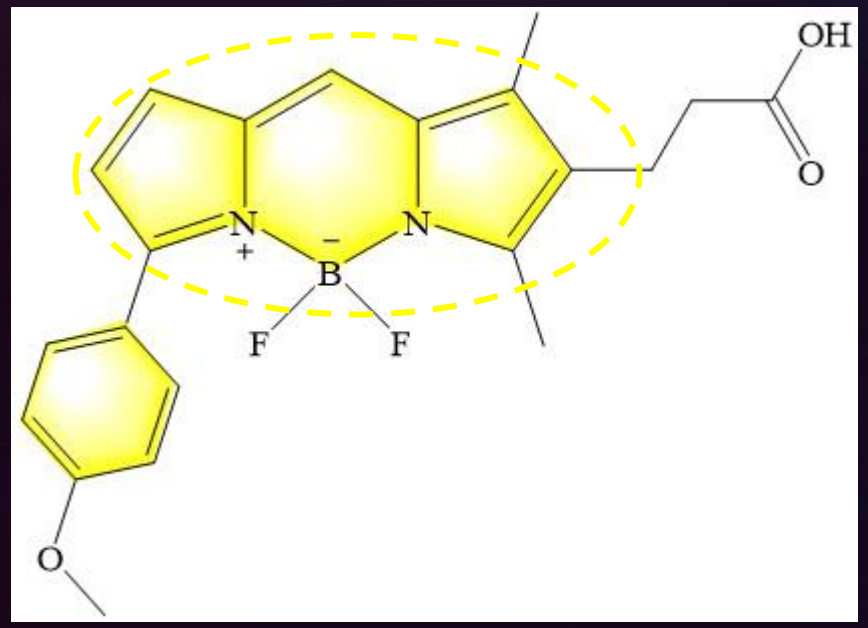
Fluorescent Probe Technology

- The fluorescent labeling reagent is used to label or derive the substance to be tested to generate a substance with high fluorescence intensity, thereby realizing the qualitative and quantitative analysis of the substance to be tested.
- Fluorescent probes can convert the interaction between molecules into fluorescent signals.
- Various types of fluorescent probes can be constructed using common fluorescent dyes.

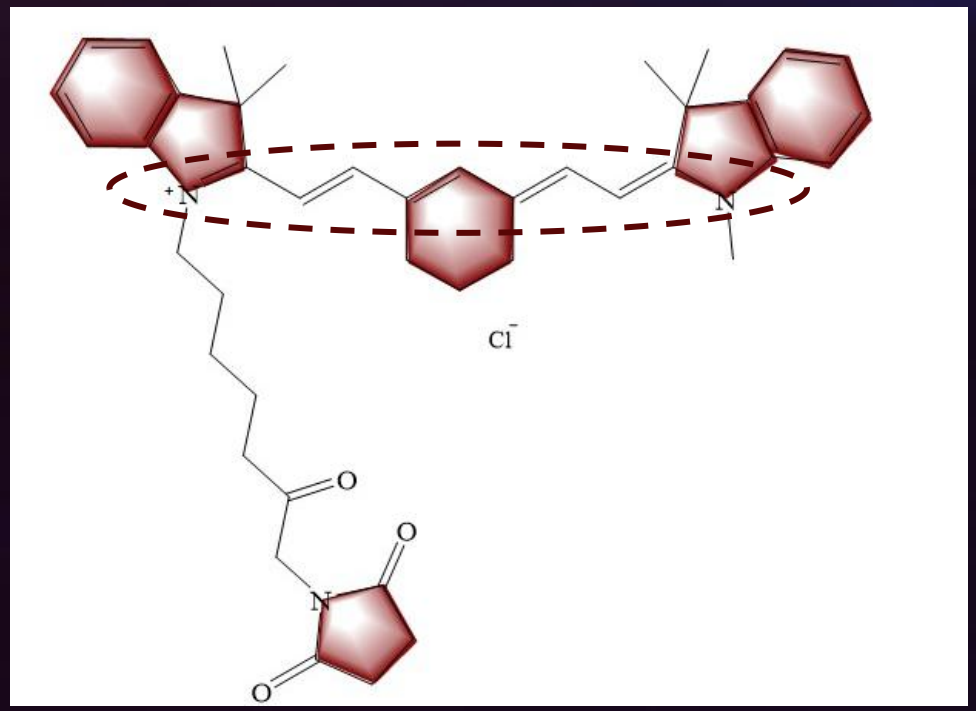
Different probes/dyes types



BODIPY(BDP)

- BODIPY (BDP) is the abbreviation for boron-dipyrromethene.
- BODIPY core can be modified by different active groups (such as succinimide ester, azide, amino, carboxylic acid) to obtain a series of derivatives.
- High detection sensitivity, high fluorescence quantum yield, high molar absorption coefficient, good light stability, insensitive to pH

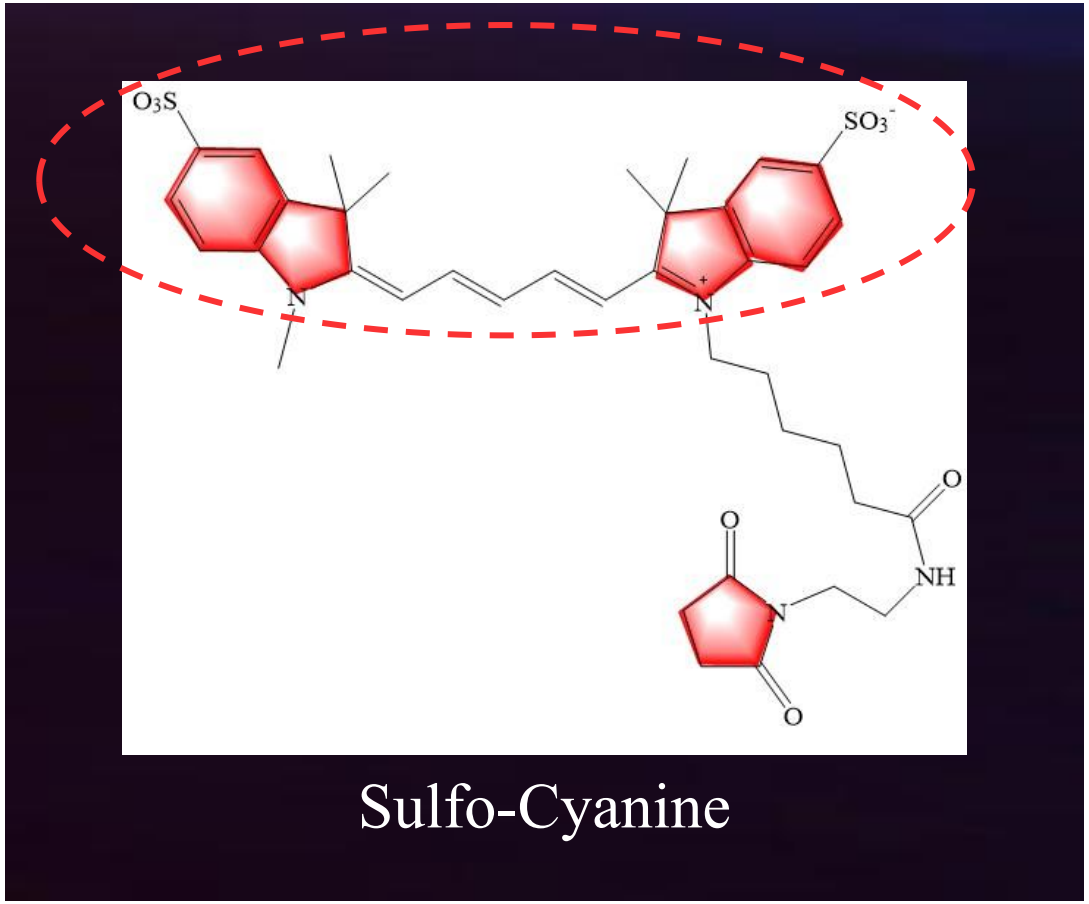
Different probes/dyes types



Cyanine

- Cyanine dyes are molecules with a polymethylamine bridge between two nitrogen atoms, with delocalized charges.
- Cyanine dyes have a high molar extinction coefficient, usually more than 100,000 $Lmol^{-1}cm^{-1}$.
- Cyanine dyes with different substituents have different spectral properties.
- The absorption and emission wavelengths of cyanine dyes are adjustable (from visible light to near-infrared region), and ideal fluorescent marking effects can be obtained in the near-infrared region.
- Cyanine dyes are generally hydrophobic.

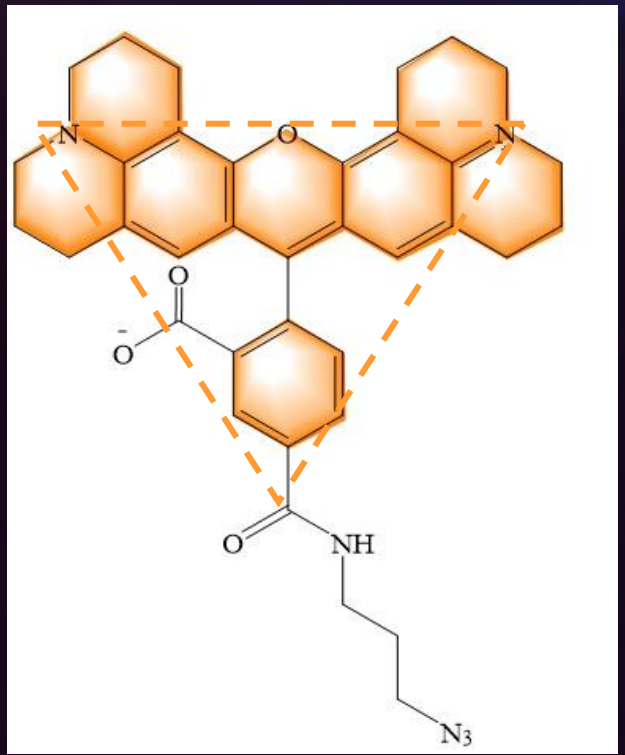
Different probes/dyes types



Sulfo-Cyanine

- A strong hydrophilic sulfonic acid group is introduced into the cyanine dye to improve the water solubility of the cyanine dye.
- Sulfo-cyanine dyes are highly water-soluble and can be used under pure water conditions.
- The fluorescence properties of sulfo-cyanine dyes are very similar to those of cyanine dyes and are less dependent on solvent and reaction environment.

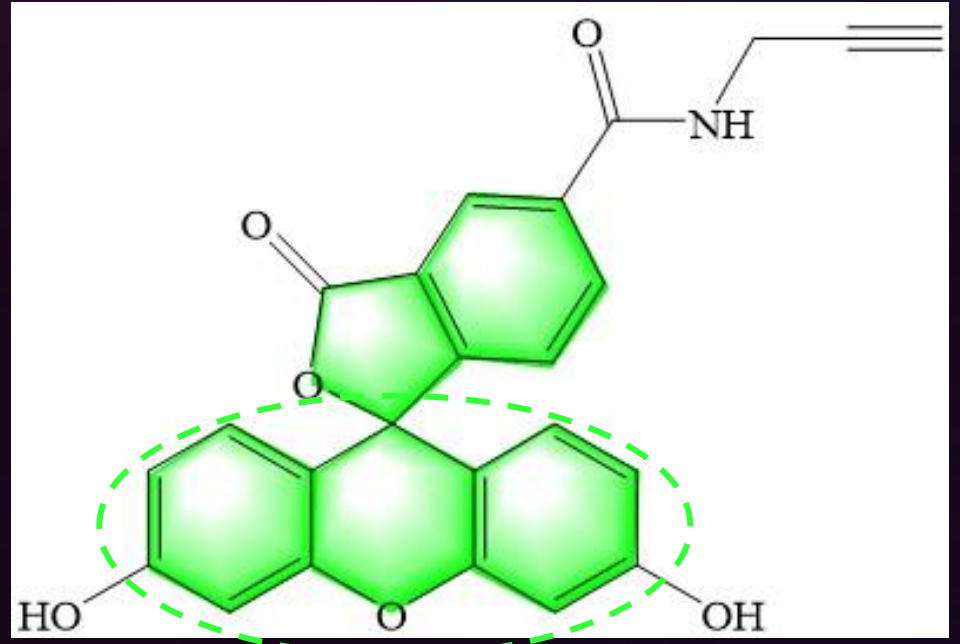
Different probes/dyes types



Rhodamine

- The basic skeleton of rhodamine is composed of the xanthene matrix substituted by the amino group at the 3 and 6 positions and the aromatic ring connected by the carbon atom at the 9 position.
- Rhodamine dyes have good light stability, are not sensitive to pH, have high fluorescence quantum yield, and emit longer wavelengths (generally greater than 500 nm).
- Rhodamine dye has better solubility in water.

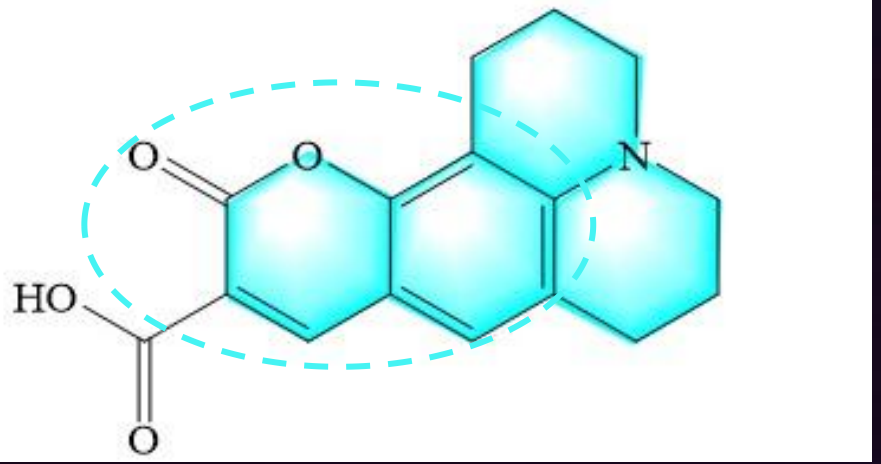
Different probes/dyes types



Fluorescein

- Fluorescein and its derivatives are important fluorescent probe materials and belong to the xanthene dyes.
- Luciferin plays a role in the luciferase bioluminescence system as a direct carrier and energy transfer substance for releasing photons.
- Fluorescein derivatives have high absorption rate, excellent fluorescence quantum yield and good water solubility.
- Its fluorescence is greatly affected by pH.

Different probes/dyes types



Coumarin

- Coumarin compounds take benzopyrone as the main structure.
- After different positions in the molecular structure of coumarin dyes are combined with different substituents, the fluorescence intensity of the dyes will change.
- Coumarin dyes have a small molecular weight, can be excited by ultraviolet, and generally emit blue fluorescence.
- Coumarin dyes have a large Stokes shift, good light stability, and strong ability to penetrate cells.

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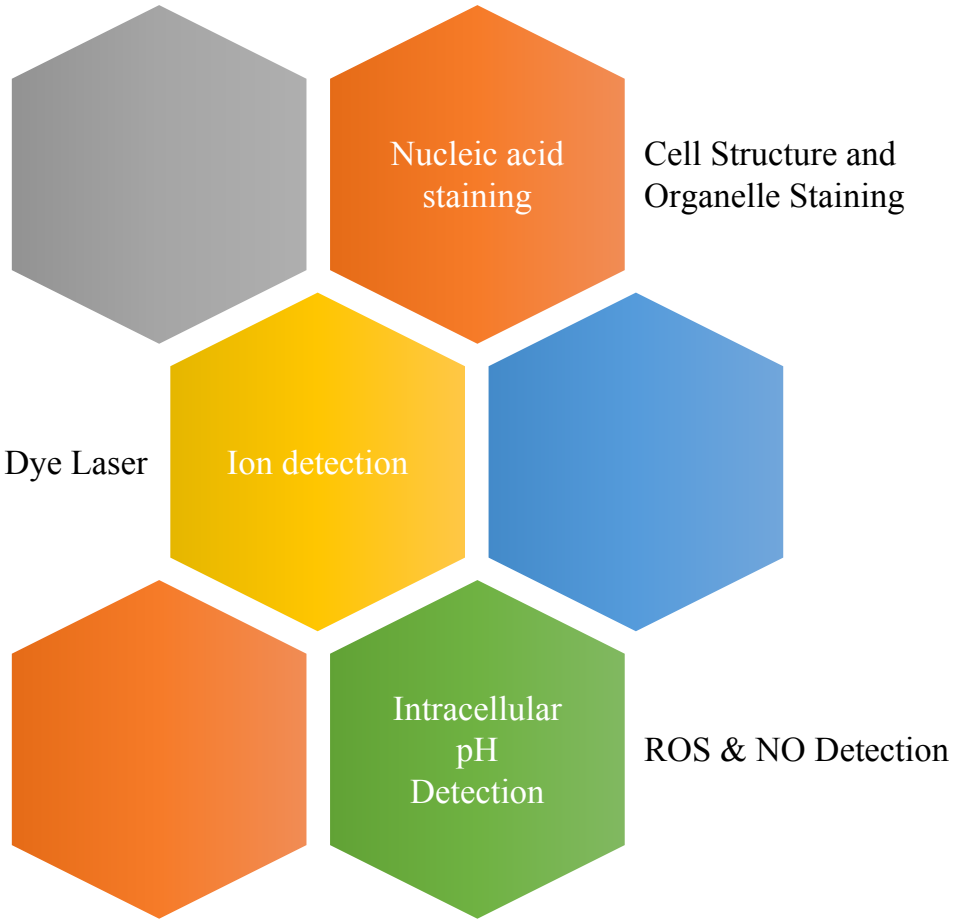
Applications



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Fluorescent Probes & Dyes

BOC Sciences currently offers an extensive catalog products，Our product portfolio comprehensively covers many types of fluorophores, fluorescent probes, and fluorescent dyes, many of which are not available elsewhere.

Examples of our products

Fluorophore	Excitation maximum(nm)	Emission maximum (nm)
Cyanine3	555	570
Cyanine3.5	591	604
Cyanine5	646	662
Cyanine5.5	684	710
Cyanine7	750	773
Cyanine7.5	780	808
sulfo-Cyanine3	548	563
sulfo-Cyanine3.5	576	603
sulfo-Cyanine5	646	662
sulfo-Cyanine5.5	675	694
sulfo-Cyanine7	750	773
sulfo-Cyanine7.5	778	797

Fluorophore	Excitation maximum(nm)	Emission maximum (nm)
AF488	495	519
BODIPY FL	503	509
BODIPY TMR	545	570
BODIPY TR	589	616
BODIPY 505/515	505	515
BODIPY 558/568	561	569
BODIPY 630/650	628	642
BODIPY 650/665	649	667
Fluorescein FAM	494	520
ROX	570	591
Rhodamine 6G	528	551
Coumarin 343	437	477

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Our Advantages

- High Sensitivity
- Good Selectivity
- Easy to Use
- Low Cost
- Long Distance Light
- No Pretreatment Required
- Not Affected By Electromagnetic Fields

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