Nimble Juice *RTYPE*

Cat. No.: SJ002-0500 Size: 500 mL
Storage: 4°C, protect from light
Ex/Em: 330, 390/ 570 nm

Description

Nimble Juice *RTYPE* is a fast and sensitive fluorescent dye for visualization and quantitation of proteins separated by SDS-PAGE. It comes as a 1x solution that is ready to use at the working concentration. Nimble Juice *RTYPE* is normally low fluorescent but emits strong fluorescence (bright golden color) when bound to proteins. The staining procedure is a simple two-step protocol (microwave and stain) that can be completed in as little as 12 minutes. During the experiment, it doesn't require organic solvents and acetic acid. A destaining step is not generally recommended, but may be employed to reduce the background, simply by agitating the gel in water for 1-5 minutes. Gels stained with the Nimble Juice *RTYPE* may be directly visualized with a variety of different UV-based fluorescence imaging systems. The maximum emission wavelength of the protein-bound Nimble Juice *RTYPE* is near 570 nm. Nimble Juice *RTYPE* gives exceptional sensitivity and a wide dynamic range for protein detection. The bound Nimble Juice *RTYPE* dye is easily removed from the protein by immersing the gel in sufficient water, thus it is well compatible with subsequent enzymatic digestion and mass spectrometry for proteomic applications. The stained gels may be stored in the stain solution in dark at 2-8°C.

Storage

The product is stable for at least 1 year when stored at 4°C. Avoid exposure to temperatures higher than 37°C, and protect from the light.

Equipment Required but Not Supplied

1. Staining containers — Glass trays are recommended.
2. Imaging equipment — Gels are best imaged using a UV-based fluorescence imager capable of performing the excitation near the 330 nm and 390 nm wavelengths and the detection near the 570 nm wavelength.
3. Laboratory shaker or rocker.
4. Powder-free latex, vinyl, or nitrile gloves.

Instructions for the Use of Nimble Juice *RTYPE*

After electrophoresis, take out the mini-gel (1.0mm), and mildly wash with the ultrapure water.
The following process is for one mini-gel:

Step 1 Microwave

Place the gel in 50 mL of ultrapure water in a loosely covered container and microwave (900 to 1,100 watts) for about 1 minute until the solution almost boils. Shake the gel on an orbital shaker for 1 minute. Discard the water and repeat this step 2 times.

Step 2 Stain

Add 25 mL of Nimble Juice *RTYPE* and microwave for about 45 seconds until the solution almost boils. Shake the gel on an orbital shaker for 5 minutes. Discard the water, and mildly wash with the ultrapure water. Destaining is not necessary for clear visualization. If needed, immerse the gel into 60 mL ultrapure water with gentle agitation for 1-5 min.

Note: Prolonged wash might largely reduce signals.

Step 3 UV box

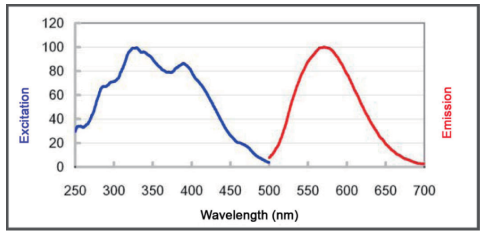
The gel stained with Nimble Juice *RTYPE* was visualized using UV light excitation. We recommend to adjust excitation / emission to around 330 nm / 570 nm for best results. If the imaging equipment has no preprogrammed imaging function for Nimble Juice *RTYPE*, the imaging setting for SYPRO® Ruby stain or ethidium bromide that uses UV transillumination is recommended. Any imaging system using UV light excitation may be used to image Nimble Juice *RTYPE*.

Subsequent analysis

Nimble Juice *RTYPE* fluorescent dye bound to proteins can be easily removed by keeping the gel in plenty of pure water or general buffered saline for hours. Analyses pertaining to imaging such as enzymatic digestion, mass spectrometry, and proteomics applications can be better conducted by use of dye-free proteins to minimize unwanted experimental interference from dye molecules attached.

Fluorescence Characteristics

Nimble Juice *RTYPE* has its excitation peaks at 330 and 390 nm and emission maximum at 570 nm, making it compatible with UV-based imagers.



Sensitivity of Nimble Juice *RTYPE*

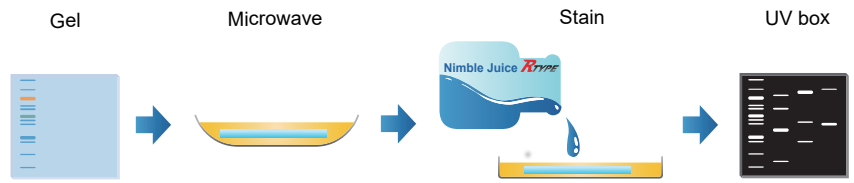
The Nimble Juice *RTYPE* is highly sensitive, and the amount of proteins required to be visualized by Nimble Juice *RTYPE* is much less than what is needed for using the conventional coomassie blue stain. The Nimble Juice *RTYPE* exhibits a more optimal staining effect than the coomassie blue staining method while takes relatively less time than the coomassie blue. The limit of sensitivity for individual proteins is around 20 ng or less.

Protein Markers Suitable for Nimble Juice *RTYPE*

Molecular weight standards that have been prestained with a visible dye do not stain with Nimble Juice *RTYPE* thus cannot be imagined by fluorescence in gels stained with Nimble Juice *RTYPE*. We recommend the use of unstained protein standards as the alternative for Nimble Juice *RTYPE*.

Caution

1. During the operation, always wear the latex or vinyl gloves while handling reagents.
2. Research Use Only. Not intended for any animal or human therapeutic or diagnostic uses.



Troubleshooting

Problem	Possible Cause	Solution
Poor staining sensitivity	Too short or prolonged fixing period	Follow the recommendations for fixing.
	Too long destain /wash	Do not destain or wash the gel in water for more than 5 min.
Poor staining sensitivity	Reuse of the stain	Reuse of Nimble Juice RTYPE is not recommended.
	Dirty containers for staining	Make sure that the staining trays and other equipment have been thoroughly cleaned.
High staining background	Excess dye remained on the gel surface	Quickly rinse the gel with clean water immediately before imaging.
	Long duration of exposure in staining solution	Reduce time of staining if needed.
	Dirty equipment or staining trays	Make sure that the staining trays and other equipment have been thoroughly cleaned.
No detectable signals for protein bands or spots	Error of imaging system	Check the instrument instruction or contact the manufacturer of the imaging instrument.