**SunJin Lab**

www.sunjinlab.com

**Product Information**

**Optical Clearing Innovation**

June 2016

***Rap i Clear* ® CS**

**CLARITYTM Specific mounting reagent (RI=1.45nD)**

*RapiClear® CS mounting solution RapiClear® CS mounting gel*

*RapiClear® CS* is an aqueous-based clearing reagent with the same refractive index as the CLARITYTM (Stanford university) hydrogel–tissue hybrid (1.45nD). Lipid-extracted hydrogel effectively becomes uniformly transparent after immersion in RapiClear® CS mounting solution. As a result, sample image quality can reach to cellular resolution even at the depth of several millimeters using confocal microscopy or light sheet illumination microscopy.

*RapiClear® CS mounting solution* (1.45nD) is a liquid and ready to use reagent. After SDS was completely washed out by incubating the hydrogel in PBS and PBST solution, hydrogel can be directly transferred into mounting solution for optical clearing*.*

*RapiClear® CS mounting gel* (1.45nD) is a jelly-like reagent

with the melting temperature in approximate 75 C and gelling

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temperature below 30 C. It is designed for mounting hydrogel sample cleared with the RapiClear® CS mounting solution. RapiClear® CS mounting gel does not affect the clearing effect of mounting solution. Samples mount in mounting gel can prevent hydrogel from swelling as well as floating.

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**OPERATION**

1. Hydrogel–tissue hybrid (sample) cleared with 8% SDS solution and then washed with 0.2% PBST and PBS thoroughly.

2. Transfer sample to a well plate or centrifuge tube with RapiClear® CS mounting solution 5~ 10 times of the sample volume. Sample will regain the original size within 24 hours.

3. Sample is then directly embedded to the RapiClear® CS mounting gel. Preparation of embedded sample requires a container suitable for confocal observation. The simplest approach is to use iSpacer (SunJin Lab Co.).

3-1 Place the mounting gel in hot-water bath or heating

block (75 C) for 15 min.

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3-2 Once molten, the mounting gel is left to cool to 40 C in a water bath or on a heating plate. It is very important

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to ensure that the mounting gel is at 40 C before use.

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3-3 Users can aliquot mounting gel to 2~5 ml tubes for later

use. Label and store at 4 C.

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3-4 Sample is introduced to the container with blunt-ended forceps. iSpacer with 24 x 40 mm coverslip is used as a container, [www.sunjinlab.com/demo](http://www.sunjinlab.com/modules.php?name=introduction&op=demonstration).

3-5 Place the molten mounting gel to the container. Avoid bubble formation during handling.

3-6 Place a 24 x 40 mm coverslip and seal with nail polish. Avoid bubble formation during handling.

3-7 Let the mounting gel polymerize at RT for 30 minto 1 hour.

4. Confocal imaging.

5. Detailed CLARITYTM protocol is available online at

<http://capture-clarity.org/>

**REFERENCE**

Ye, L.#, Allen, W.E.#, Thompson, K.R.#, Tian, Q., Hsueh, B., Ramakrishnan, C., Wang, A.C., Jennings, J.H., Adhikari, A., Halpern, C.H., Witten, I.B., Barth, A.L., Luo, L., McNab, J.A., Deisseroth, K.\* (2016). Wiring and molecular features of prefrontal ensembles representing distinct experiences. Cell 165:

1-13. \*corresponding authors, # equal contribution. doi: <http://dx.doi.org/10.1016/j.cell.2016.05.010>

**STABILITY AND STORAGE**

RapiClear® CS can be stored at -20℃~RT. When stored at ≤ 4℃, the product is stable for at least 12 months.

**WARNING AND PRECAUTIONS**

Repeated exposure may cause skin dryness or cracking. Prevent skin contact is suggested.

**TECHNICAL ASSITANCE**

E-mail: daniel@sunjinlab.com

***Rap i Clea r* ® CS**

**Manufacturer:**

SunJin Lab Co.

www.sunjinlab.com

4F., No. 11, Ln. 22, Bo’ai St., East Dist., Hsinchu City 30068, Taiwan

Phone: 886-3-516-5085 Fax: 886-3-516-5087