

# AI + Macro Imaging

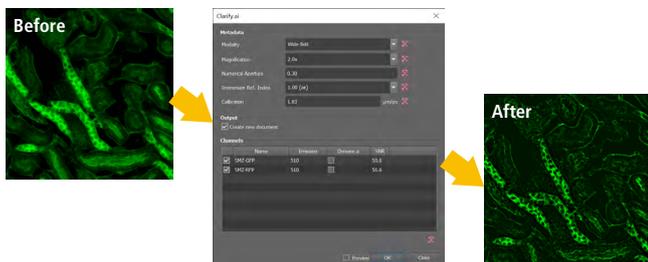
Clarify.ai is a new AI module that removes the blurred light contained in fluorescence images and generates high-contrast images. Clarify.ai, used with a stereomicroscope, can provide sharper fluorescence images than ever before; it enables not only macroscopic observation of model organisms, but also microscopic observation of fine structures.

## What is Clarify.ai?

Clarify.ai is an AI-based image processing function that, by means of a neural network, has learned the characteristic components of fluorescent light emitted from out-of-focus planes. It can remove “blurred light” from fluorescent images, providing clear, high-contrast images. As processes images faster than conventional deconvolution processing, it improves experiment throughput with less stress, even when combined with image analysis.

## Clarify.ai workflow

No AI training process is required for Clarify.ai. The necessary parameters are automatically obtained from image metadata, so there are no complicated settings. Even first-time users can easily upgrade images with just a click.



## Product Information

### SMZ25/SMZ18 Research Stereo Microscope

A stereo microscope that provides both brightness and high-resolution. Having the world’s highest zoom ratio, the SMZ25 enables seamless observation from macro to micro.

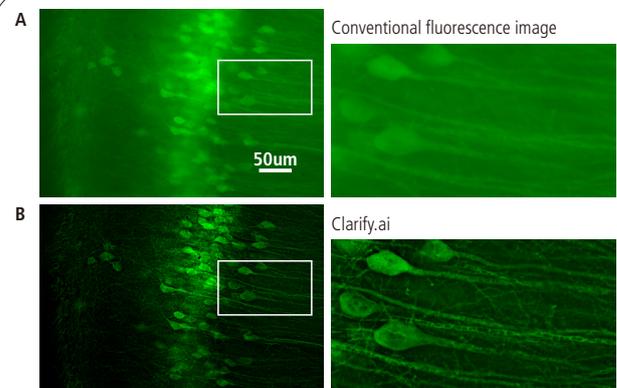


### Clarify.ai AI module for microscopes

Simply by adding this module to software, you can obtain high-contrast fluorescent images. In combination with image analysis tools, it can be utilized for counting, area measurement, and other morphological analyses.

## Effective for thick samples

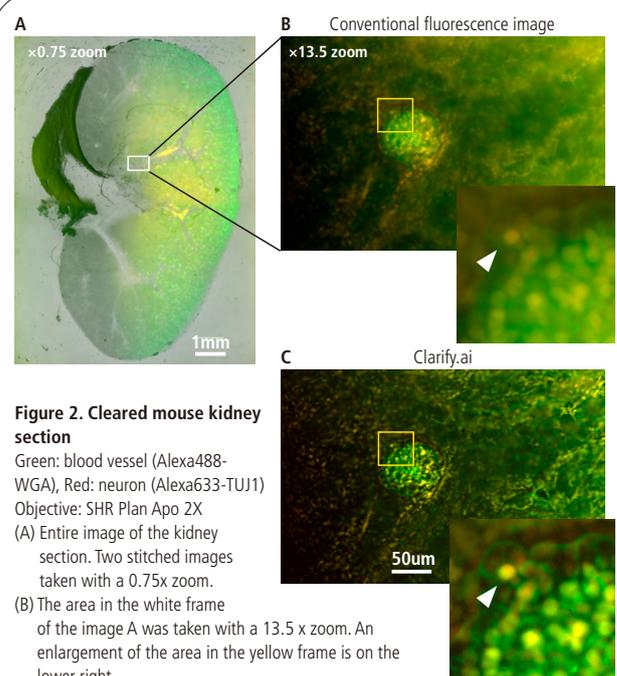
In observation of model organisms, tissue slices, and 3D culture systems, genuine fluorescent signals are often buried in blurred light. Clarify.ai makes it possible to obtain clear images without blurriness.



**Figure 1. Cleared mouse brain section**

Green: neuron (GFP), objective: SHR Plan Apo 2X

(A) Conventional fluorescence image. An enlargement of the area in the white frame is on the lower right. (B) Image of A processed by Clarify.ai. The structure of nerve fibers and cell bodies can be observed in detail.



**Figure 2. Cleared mouse kidney section**

Green: blood vessel (Alexa488-WGA), Red: neuron (Alexa633-TUJ1)  
Objective: SHR Plan Apo 2X

(A) Entire image of the kidney section. Two stitched images taken with a 0.75x zoom. (B) The area in the white frame of the image A was taken with a 13.5 x zoom. An enlargement of the area in the yellow frame is on the lower right. (C) Image B was processed with Clarify.ai. An enlargement of the area in the yellow frame is on the lower right. The blood vessel structures (arrow) that were blurry in the conventional fluorescent image can be detected more clearly with Clarify.ai.