



NemaMetrix

ScreenChip SC10 & SC20 Loading Procedure

Worm Preparation:

Note: All centrifugation steps should be performed at 6000 rpm for 2 min.

For SC10:

- 1) Transfer L1s to an epitube and centrifuge to pellet the worms and carefully remove supernatant;
- 2) Proceed to step 3.

For SC20:

- 1) Transfer L1s to a NGM plate with [Instant Freeze-dried OP50](#) and allow worms to grow to L2 stage for **20-24 hrs at 20 °C**.
- 2) Wash worms off the plate with M9 and proceed to step 3.

Sample preparation:

- 3) Wash worms with M9 buffer and centrifuge again to pellet the worms and remove the supernatant;
- 4) Repeat wash 3 times *;
- 5) Pellet the worms and remove and discard supernatant;
- 6) Resuspend the worm pellet in **1 ml** pumping stimulus solution (serotonin or fully resuspended bacteria), briefly mix and centrifuge to pellet the worms **;
- 7) Start a timer for 20 minutes and then proceed with the next step ***;
- 8) Remove most of the supernatant leaving the worms in approximately **100 ul** serotonin solution;
- 9) Proceed to ScreenChip loading.

** It is **critical** that your worms are as clean as possible. If there are any large particles of debris, it will clog the chip. If you find that your worms have visible debris still in the epitube, continue to wash them.*

*** The serotonin solution should be used within **4 hrs** from preparation time. The serotonin concentration needed should be chosen based on the expected phenotypes. See [Technote](#) for more details.*



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Loading Worms in ScreenChip SC10/SC20:

Watch the video at: <https://nemametrix.com/product/screenchip100/>

- 1) Connect the inlet tube to the syringe stub adapter and load the syringe with about **1 ml** of 10 mM serotonin;
- 2) Eliminate any trapped air from the syringe and tubing by turning the assembly upside-down and pushing depressing the syringe until the air is pushed out;
- 3) Immerse the inlet tube into the sample mix, carefully draw the worm/serotonin mix into the tube's tip. Avoid drawing any air bubbles;
- 4) Insert the inlet tube into the inlet of the ScreenChip (left) and push the plunger lightly until the worms enter the waiting room. Because of the very small size of the worm channel in SC10/20 it might take up to **3-4 min** to see liquid flowing into the ScreenChip;
- 5) Use a light, continuous pressure on the syringe to position the worms in the recording channel (too high a pressure might damage the ScreenChip).

**** Worms will be ready for data recording in **20 min** from this step. If **20 min** have not elapsed by the time your worms are loaded in the ScreenChip, wait to record from worms.*

Caution: Because the worm channels in SC10 and SC20 ScreenChips are very small in size, the liquid flow is low, so considerable smaller pressure is necessary to load the worms in the system. If you visually detect under the microscope that the ScreenChip walls are flexing, adjust by decreasing the pressure you apply.