

Additional file 12: Table S3. Details for microCT scans

| Object                               | Stained solution | Stained Time | Scanned part | Frame average | Rotation Steps | Number of projections | Voxel Size ( $\mu\text{m}$ )* | Number of scanned parts | Dataset size ( GB )** | Figure         | Video         | Data File Name***  |
|--------------------------------------|------------------|--------------|--------------|---------------|----------------|-----------------------|-------------------------------|-------------------------|-----------------------|----------------|---------------|--------------------|
| <i>X. japonica</i> holotype female   | 25% Lugol        | 2days        | whole body   | 2             | 0.18°          | 2000                  | 14.50                         | 3                       | 1.75                  | Fig. 1d        | Videos S1, S2 | 1_X_jp_halotype_L1 |
|                                      |                  |              | anterior     | 2             | 0.18°          | 2000                  | 5.20                          | 1                       | 0.72                  | Fig. 1e,f      |               | 2_X_jp_halotype_L2 |
|                                      |                  |              | anterior     | 2             | 0.10°          | 3600                  | 4.89                          | 3                       | 2.32                  | Fig. 3a,b      | Video S2      | 3_X_jp_halotype_L3 |
| <i>X. japonica</i> paratype juvenile | 25% Lugol        | 6hr30min     | whole body   | 2             | 0.18°          | 2000                  | 5.41                          | 1                       | 0.62                  | Fig. 2d,e      | Videos S1, S3 | 4_X_jp_paratype_L1 |
|                                      |                  |              | anterior     | 2             | 0.18°          | 2000                  | 3.73                          | 1                       | 0.84                  |                |               |                    |
|                                      | 1% PTA           | 1day         | whole body   | 2             | 0.18°          | 2000                  | 5.41                          | 1                       | 0.51                  |                |               |                    |
|                                      |                  |              | anterior     | 2             | 0.18°          | 2000                  | 3.73                          | 1                       | 0.83                  |                |               |                    |
|                                      |                  |              | anterior     | 2             | 0.18°          | 2000                  | 3.51                          | 1                       | 0.74                  | Figs. 2c, 3c,d |               | 5_X_jp_paratype_P1 |
|                                      |                  |              |              |               |                |                       |                               |                         |                       |                |               |                    |
| <i>X. bocki</i> sample 1             | 25% Lugol        | 3hrs         | whole body   | 4             | 0.10°          | 3600                  | 3.20                          | 1                       | 0.62                  |                |               |                    |
| <i>X. bocki</i> sample 2             | 0.3% PTA         | 2days        | whole body   | 2             | 0.10°          | 3600                  | 3.22                          | 2                       | 0.75                  |                | Videos S1, S3 | 6_X_bocki_P1       |
|                                      |                  |              | anterior     | 4             | 0.10°          | 3600                  | 3.22                          | 1                       | 0.49                  | Fig. 3e,f      |               | 7_X_bocki_P2       |

\* : Isotropic voxel resolution

\*\*: Total size (gigabyte) of 8bit TIFF format image files

\*\*\*: File Name in figshare repository [70]