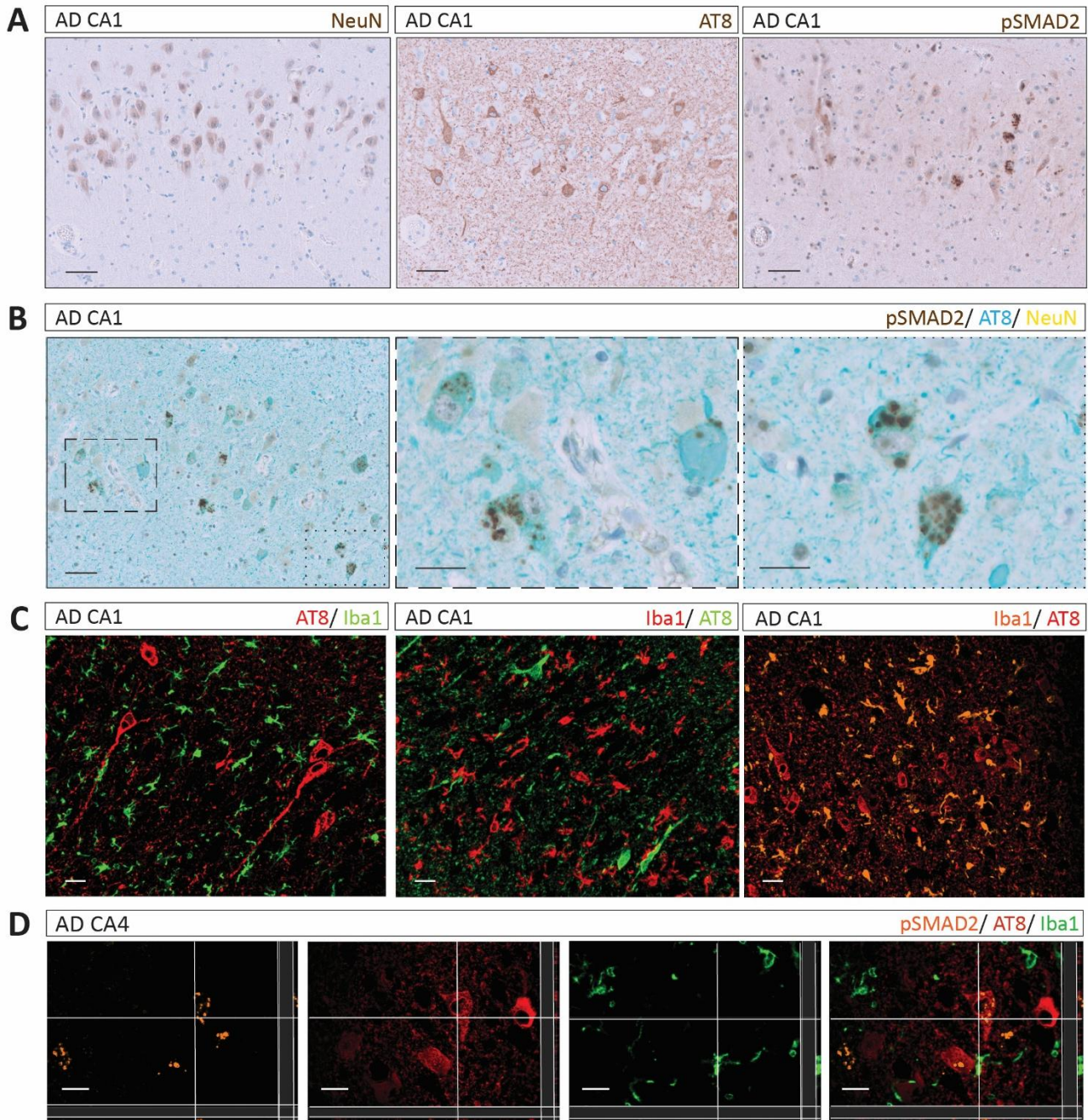


## Supplementary material

### Supplementary Figure 01



**Suppl. Figure 1: Validation of workflow robustness across independent cases and marker combinations.** **A.** Single cIHC of serial sections showing NeuN, AT8, and pSMAD2. Scale bar: 50  $\mu$ m; case #2. **B.** Multiplex cIHC three-plex staining for pSMAD2, AT8, and NeuN. Scale bars: 50  $\mu$ m (overview), 20  $\mu$ m (inset); case #2. **C.** IF duplex staining of AT8 and Iba1 with different staining configurations (AT8/Iba1 and Iba1/AT8) using Cy5/FAM and R6G/Cy5 fluorophore combinations. Scale bar: 50  $\mu$ m; case #2. **D.** IF three-plex staining for pSMAD2, AT8, and Iba1. Scale bar: 20  $\mu$ m; case #2.