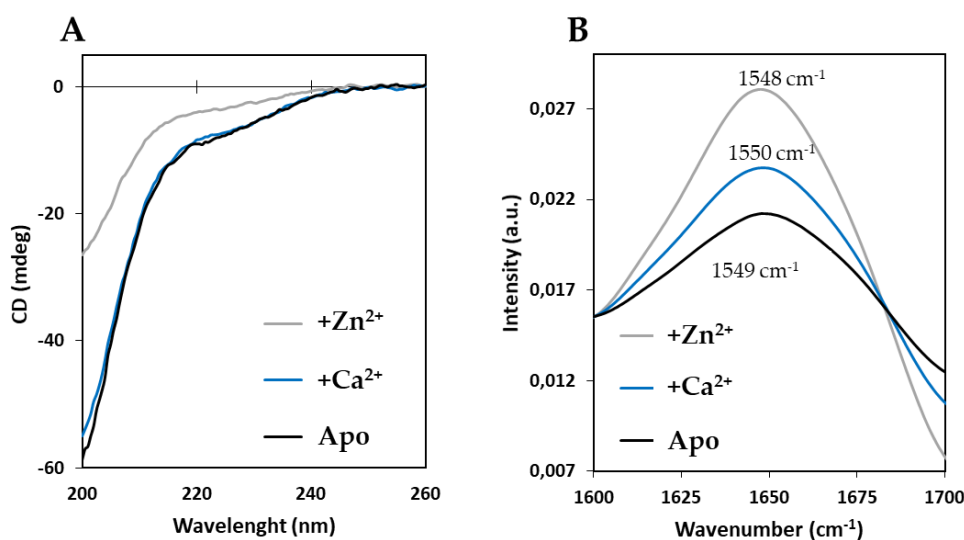




## Supplementary materials

**Table S1.** Determination of calcium and zinc binding stoichiometries to hTau441 from the analysis of the +18 peak multiplets (shown in Figure 1).

	Molecular weight (Da)	Experimental molecular weight (Da)
Apo hTau441	45800	45755 ( $\pm 0.002$ )
hTau441 + 1 Ca <sup>2+</sup>	45840	45794 ( $\pm 0.002$ )
hTau441 + 1 Zn <sup>2+</sup>	45865	45819 ( $\pm 0.001$ )
hTau441 + 2 Zn <sup>2+</sup>	45930	45883 ( $\pm 0.003$ )
hTau441 + 3 Zn <sup>2+</sup>	45995	45947 ( $\pm 0.002$ )
hTau441 + 4 Zn <sup>2+</sup>	46060	46011 ( $\pm 0.001$ )



**Figure S1.** Metal ion binding to Tau does not change its structural conformation. **(A)** Circular dichroism spectra of 10  $\mu$ M Tau in the absence (black) or in the presence of 40  $\mu$ M CaCl<sub>2</sub> (blue) or 40  $\mu$ M ZnCl<sub>2</sub> (grey). **(B)** Attenuated total reflectance Fourier transform infrared spectra of 4  $\mu$ M Tau in absence (black) or in presence of 16  $\mu$ M CaCl<sub>2</sub> (blue) or 16  $\mu$ M ZnCl<sub>2</sub> (grey). Measurements were performed after 1 h of incubation at 4 °C.