

Supplementary files:

Supp. Table 1:

Backbone NMR chemical shifts assignment (C_{α} , C' , H_{α} , N) of the α Tub410C peptide in 20 mM MES-KOH, pH 6.9 at $T=20^{\circ}\text{C}$.

Supp. Figure 1:

A. Fractions from Ni-NTA affinity chromatography were analyzed by 15% SDS/PAGE and detected by Coomassie blue staining. Fractions analyzed on lane 2 and lane 3 were combined and concentrated by ultrafiltration.

B. Expression and purification of hTau40. Lane1: before induction. Lane2: after induction. Lane 3: after boiling and centrifugation.

C. Left: NOESY- ^1H - ^{15}N -HSQC NMR spectrum (zoomed) of the α Tub410C (400 μM) in 20 mM MES-KOH, pH 6.9 at $T=20^{\circ}\text{C}$. The zoomed region shows the spin system of Y451. Right: Zoom of a NOESY- ^1H - ^{15}N -HSQC NMR spectrum of the α Tub410C (400 μM) in the presence of 3 mM spermine in 20 mM MES-KOH, pH 6.9 at $T=20^{\circ}\text{C}$. The arrow points out the Y451/spermine intermolecular nOe.

Supp. Figure 2:

Superimposition of ^1H - ^{15}N -HSQC NMR spectrum of 400 μM α Tub410C peptide in 20 mM MES-KOH, pH 6.9 at $T=20^{\circ}\text{C}$ without (red) or with 10 mM putrescine (black).

Supp. Figure 3:

A. High concentration of spermine do not cause aggregation of Tau. 100 μM ^{15}N - α Tub410C, 40 μM Tau and 9 mM spermine were mixed in 20 mM MES-KOH, pH 6.9, 1 mM DTT at 20°C . After 2 hours at 20°C , the sample was centrifuged (20 000 x g, 20 min). Pellet, was resuspended in a volume of 1X SDS/PAGE buffer equivalent to the initial sample volume. Equivalent volumes of supernatant and pellet were analyzed by 12% SDS/PAGE.

B. 1D ^1H NMR spectrum (zoomed) on the 1.4-1.6 ppm region obtained with 20 mM MES-KOH, pH 6.9, 20 % Glycerol, 40 μM tubulin at $T=20^{\circ}\text{C}$ in the presence of 300 μM spermine and 2 mM MgCl_2 (green) or 3 mM MgCl_2 (red) or 7 mM MgCl_2 (blue). Intensities of the spectra were calibrated with an external reference. The spectrum obtained in similar conditions with 5 mM calcium is displayed for comparison (purple).

Supp. Figure 4:

A. Human GFP- α -Tubulin, GFP- α -Tubulin Δ 13C and GFP- α -Tubulin Δ 23C were transfected in HeLa cells (x 60). 24 h post-transfection, 0.5 μM taxol was added during 1 h when indicated in the figure. Cells were fixed and labeled with anti-tubulin antibodies.

B. Higher magnification of previous images.

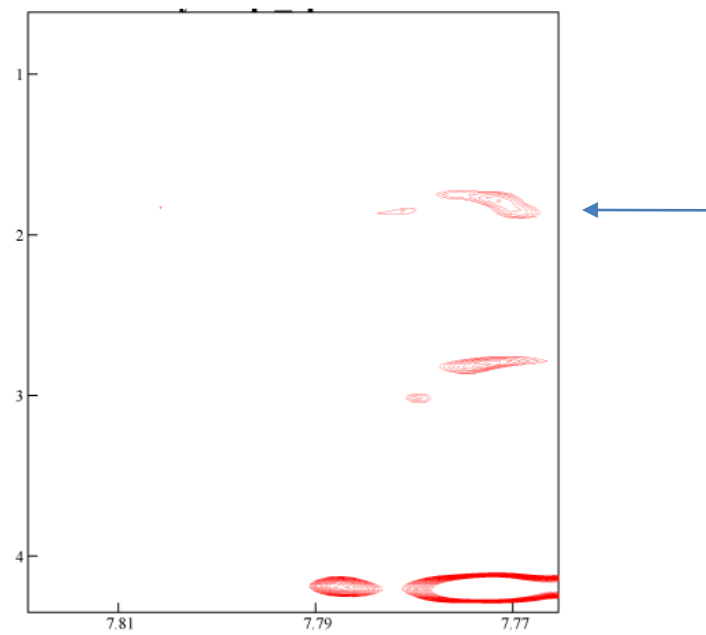
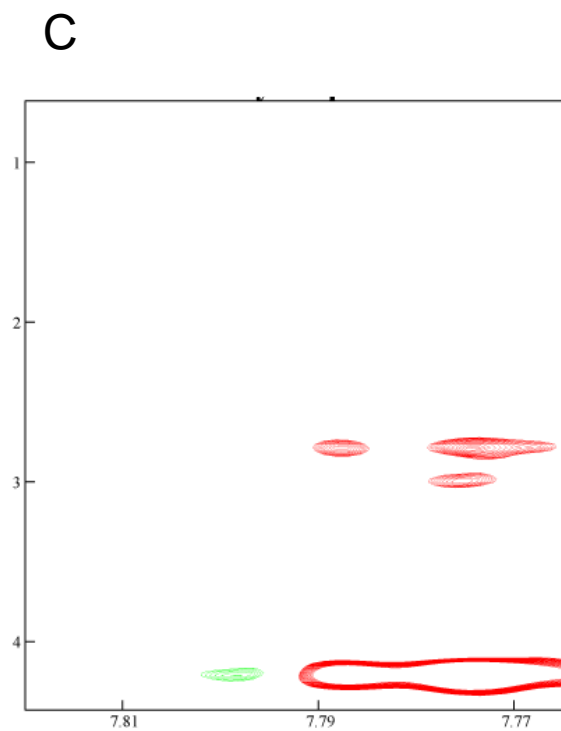
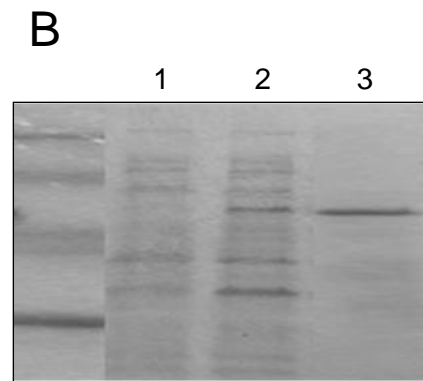
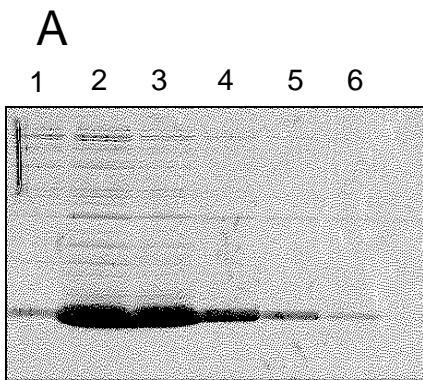


Figure S1

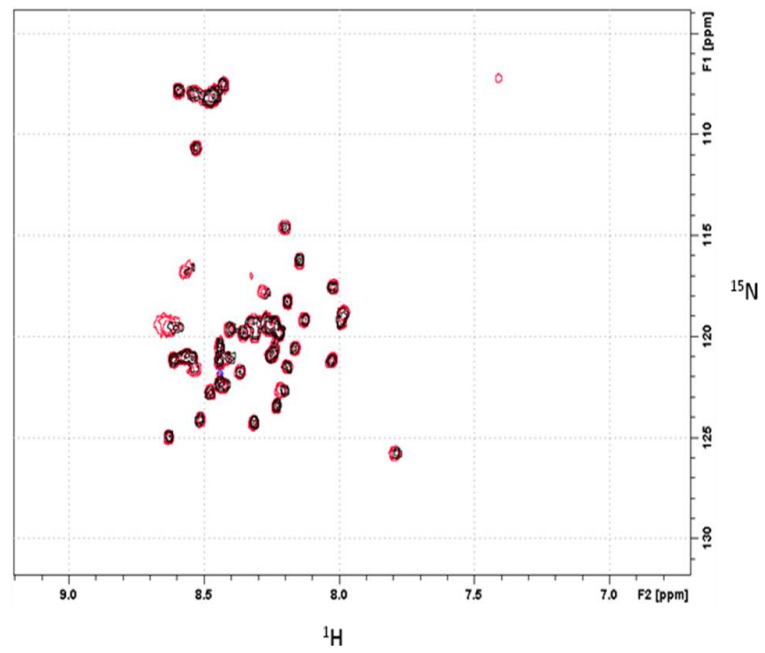
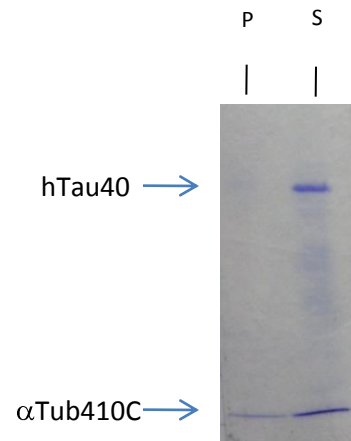


Figure S2

A



B

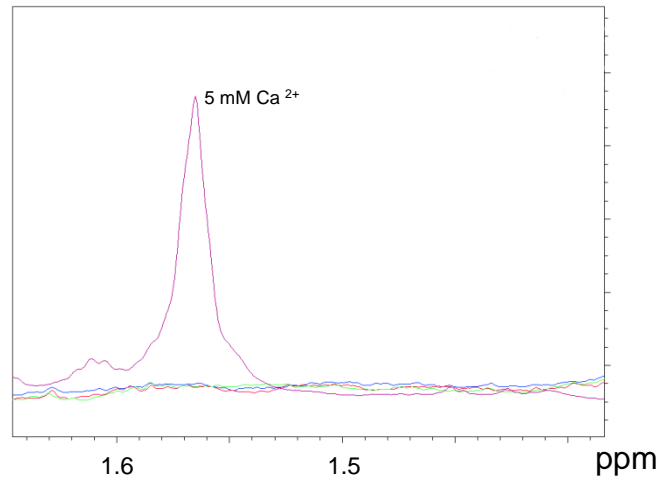


Figure S3

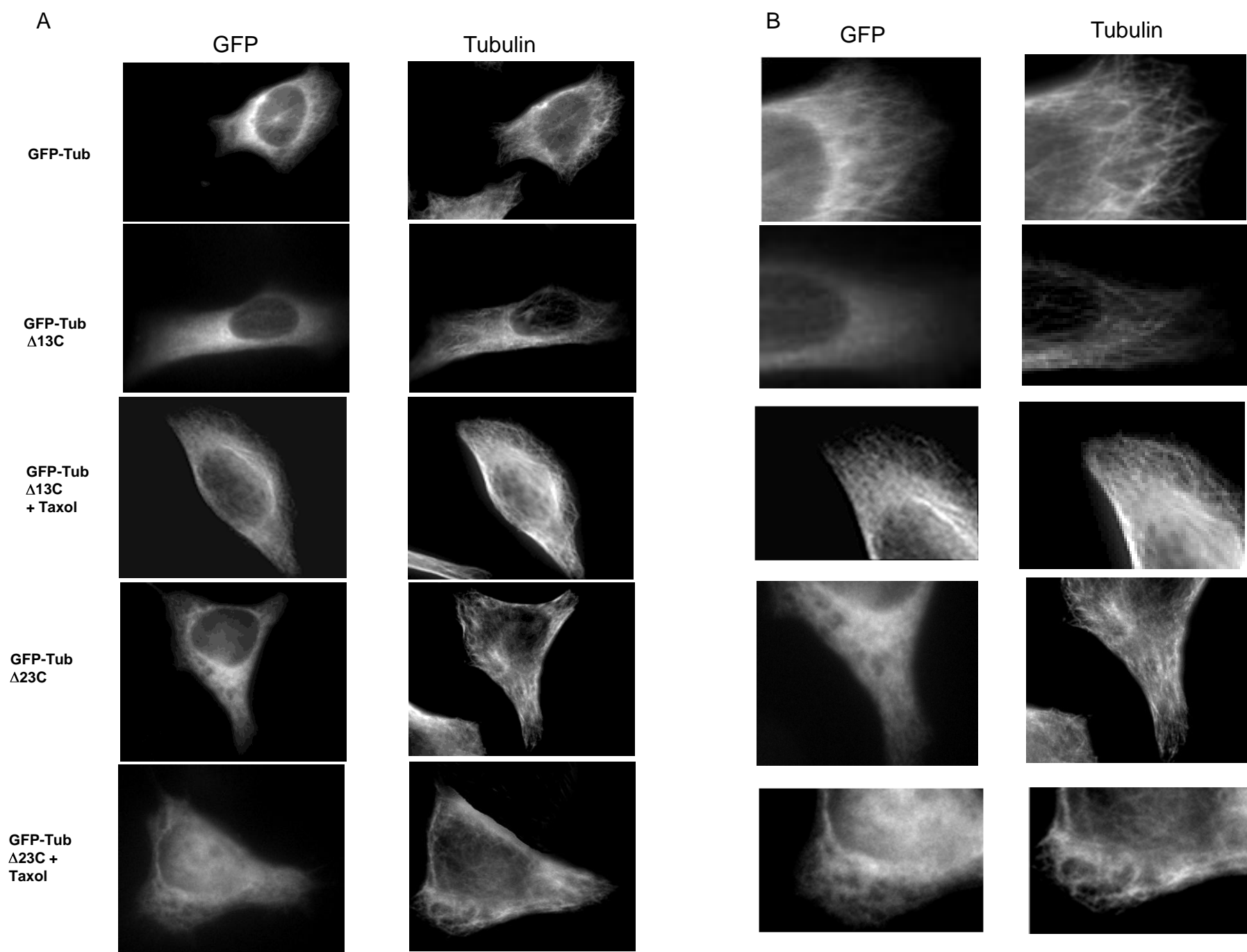


Figure S4