

Description of Additional Supplementary Files

Supplementary Movie 1 – α -tubulin detyrosination/tyrosination code impacts chromosome congression, mitotic progression, SAC satisfaction and mitotic error correction. Live cell imaging movies representing human parental, TTL KO and VASH1/2 KO (without and with MATCAP depletion) U2OS cell lines, stably expressing H2B-mRFP (magenta) and Tyrosinated/Detyrosinated GFP-Tubulin (green). First from left panel shows typical mitosis in a parental control cell. Second panel shows segregation errors in a TTL KO cell stably expressing detyrosinated GFP-tubulin. Third panel shows chromosome congression defects and mitotic delay in a VASH1/2 KO cell stably expressing tyrosinated GFP-tubulin. Fourth panel shows persistent misaligned chromosomes in a VASH1/2 KO cell stably expressing tyrosinated GFP-Tubulin combined with MATCAP depletion by RNAi. Time is in h:min.

Supplementary Movie 2 – α -tubulin detyrosination impacts metaphase plate organization and kinetochore oscillations. Live cell imaging movies representing human Parental and VASH1/2 KO U2OS cells stably expressing GFP-CENP-A. Left panel shows typical kinetochore oscillations in a parental cell. Right panel shows a VASH1/2 KO cell that displays irregular kinetochore oscillations and metaphase plate disorganization, with some kinetochore pairs coming off the plate, suggesting kinetochore-microtubule detachment. Time is in min:sec.

Supplementary Data 1 - Proteins enriched on tyrosinated microtubules in mitosis.

Supplementary Data 2 - Proteins enriched on detyrosinated microtubules in mitosis.