

**Table S2. Estimated protein amounts, rate constants and specific activities for the first set of *NbXIP1;1α* mutants.**

<i>NbXIP1;1α</i> mutant	Estimated protein amount (AU)	Background corrected rate constant (s <sup>-1</sup> )	Mean bkg corrected rate constant ± SD (s <sup>-1</sup> )	Specific activity (s <sup>-1</sup> protein AU <sup>-1</sup> )	Mean specific activity ± SD (s <sup>-1</sup> protein AU <sup>-1</sup> )
wt	2558	0.544 -0.093 -0.413	0.013 ± 0.487	0.000212 -0.000036 -0.000161	0.00000 ±0.00019
L79G/I102H /V242I	2305	4.228 2.157 3.591	3.325 ± 1.061	0.001833 0.000935 0.001557	0.00144 ±0.00046
L79G/I102H /V242I/ΔC	949	0.865 0.769 -0.058	0.526 ± 0.508	0.000911 0.000810 -0.000060	0.00055 ±0.00054
L79G/I102H /V242I/ΔD	975	0.575 0.243 -0.169	0.216 ± 0.372	0.000589 0.000248 -0.000172	0.00022 ±0.00038
L79G/I102H /V242I/ΔC/ΔD	775	0.047 0.556 -0.605	-0.001 ± 0.581	0.000061 0.000715 -0.000779	-0.00000 ±0.00075
L79G/I102H /T246I	1926	1.242 0.488 0.209	0.646 ± 0.535	0.000644 0.000253 0.000108	0.00034 ±0.00028
L79G/I102H /T246I/ΔC	2262	0.101 0.275 -0.850	-0.158 ± 0.606	0.000044 0.000121 -0.000375	-0.00007 ±0.00027
L79G/I102H /T246I/ΔD	746	0.741 0.750 -0.182	0.436 ± 0.535	0.000992 0.001004 -0.000244	0.00058 ±0.00071