## Supplementary Table 2

## PAK1 Ubiquitination Sites

KDRFYRSILPGDKTNKKKEKERPEISLPSDFEHTIHVGFDAVTGEFTGMPEQ WARLLQTSNITKSEQKKNPQAVLDVLEFYNSKKTSNSQKYMSFTDKSAED YNSSNALNVKAVSETPAVPPVSEDEDDDDDDATPPPVIAPRPEHTKSVYTRS VIEPLPVTPTRDVATSPISPTENNTTPPDALTLNTEKQKKKPKMSDEEILEKL RSIVSVGDPKKKYTRFEKIGQGASGTVYTAMDVATGQEVAIKQMNLQQQP KKELIINEILVMRENKNPNIVNYLDSYLVGDELWVVMEYL $\wedge$ GGSLTDVVTE TCMDEGQIAAVCRECLQALESLHSNQVIHRDIKSDNILLGMDGSVKLTDFG FCAQITPEQSKRSTMVGTPYWMAPEVVTRKAYGPKVDIWSLGIMAIEMIE GEPPYLNENPLRALYLIATNGTPELQNPEKLSAIFRDFLNRCLEMDVEKRGS AKELLQHQFLKIAKPLSSLTPLIAAAKEATKNNH

| 11 | 0.87 | Yes | High confidence | 245 | 0.44 | No |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 29 | 0.95 | Yes | High confidence | 247 | 0.52 | No |  |
| 39 | 0.93 | Yes | High confidence | 256 | 0.87 | Yes | High confidence |
| 48 | 0.19 | No |  | 267 | 0.16 | No |  |
| 49 | 0.24 | No | 268 | 0.13 | No |  |  |
| 50 | 0.20 | No |  | 269 | 0.14 | No |  |
| 51 | 0.16 | No | 275 | 0.32 | No |  |  |
| 63 | 0.18 | No |  | 299 | 0.49 | No |  |
| 66 | 0.11 | No |  | 308 | 0.66 | Yes | Low confidence |
| 67 | 0.36 | No |  | 309 | 0.60 | No |  |
| 68 | 0.40 | No |  | 323 | 0.63 | Yes | Low confidence |
| 70 | 0.48 | No |  | 404 | 0.58 | No |  |
| 114 | 0.23 | No |  | No |  |  |  |
| 118 | 0.43 | No |  | 430 | 0.51 | No |  |
| 119 | 0.44 | No |  | 0.39 | No |  |  |
| 134 | 0.74 | Yes | Medium confidence | 444 | 0.37 | No |  |
| 135 | 0.70 | Yes | Medium confidence | 489 | 0.53 | No |  |
| 141 | 0.78 | Yes | Medium confidence | 508 | 0.59 | No |  |
| 148 | 0.95 | Yes | High confidence | 513 | 0.60 | No |  |
| 162 | 0.86 | Yes | High confidence | 522 | 0.19 | No |  |
| 198 | 0.78 | Yes | Medium confidence | 525 | 0.27 | No |  |
| 241 | 0.56 | No | 538 | 0.61 | No |  |  |
| 243 | 0.50 | No | 542 | 0.63 | Yes | Low confidence |  |
| 244 | 0.45 | No |  |  |  |  |  |


| Label | Score range | Sensitivity | Specificity |
| :--- | :--- | :---: | :--- |
| Low confidence | $0.62<s<0.69$ | 0.464 | 0.903 |
| Medium confidence | $0.69<s<0.84$ | 0.346 | 0.95 |
| High confidence | $0.84<s<1.00$ | 0.197 | 0.989 |

