Table 3 - Source Data 1. P-values for the estimates of the rates of ubiquitin transfer to substrate *kobs* (sec-1)

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| --- | --- |
|  | Substrate prior to ubiquitin transfer\* |
| Substrate | Chain modifying E2 or E3 | E3 | S0 | S1 | S2 |
| Cyclin E | Arih1 | SCFFbw7 | 5.3 E-9 (*3.3 E-14*) | 0.00018 (*3.7 E-7*) | 9.5 E-7 (*0.000026*) |
| β-Catenin | Arih1 | SCFβTrCP | 5.6 E-8 (*4.5 E-12*) | 0.0014 (*0.000012*) | 0.79 (*6.8 E-6*) |
| Cyclin E | Ube2D3 | SCFFbw7 | 2.8 E-7 (*1.0 E-8*) | 0.017 (*0.000099*) | 0.33 (0.53) |
| β-Catenin | Ube2D3 | SCFβTrCP | 8.1 E-6 (*1.2 E-7*) | 0.00018 (*0.000014*) | ND (*0.00063*) |
| Cyclin E | Ube2R2 | SCFFbw7 | 3.4 E-7 (ND) | 1.4 E-7 (ND) | 7.6 E-11 (ND) |
| β-Catenin | Ube2R2 | SCFβTrCP | 2.1 E-9 (ND) | 2.0 E-7 (ND) | 3.2 E-9 (ND) |
| Cyclin E | Arih1/Ube2R2 | SCFFbw7 | 0.0023 (*3.6 E-11*) | 0.16 (*1.9 E-9*) | 0.089 (*3.1 E-7*) |
| β-Catenin | Arih1/Ube2R2 | SCFβTrCP | 0.000019 (*2.1 E-8*) | 0.0021 (*0.000014*) | 0.000065 (*2.2 E-6*) |
| Cyclin E | Ube2D3/Ube2R2 | SCFFbw7 | 4.5 E-12 (*3.1 E-11*) | 9.1 E-6 (*5.8 E-6*) | 4.0 E-8 (*1.8 E-8*) |
| β-Catenin | Ube2D3/Ube2R2 | SCFβTrCP | 3.5 E-6 (*8.4 E-8*) | 0.000020 (*1.4 E-6*) | 1.6 E-6 (*1.8 E-6*) |
| Ub-Cyclin E | Ube2G1 | SCFFbw7 | ND (ND) | 3.7 E-7 (ND) | 1.4 E-7 (ND) |