**SuPPLEMENTARY TABLES**

**Supplementary Table 1.** Mimetic substitution of each amino acid in the parent p5 peptide sequence to generate 79 analogous peptides**.**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | | **Peptide Sequence** |  | | **No.** | | | **Peptide Sequence** | |
| 1 | | KEAFWDRCLSVINLMSSKMLQINA |  | | 26 | | | KEAFWDRCL**A**VINLMSSKMLQINA | |
| 2 | | **R**EAFWDRCLSVINLMSSKMLQINA |  | | 27 | | | KEAFWDRCL**T**VINLMSSKMLQINA | |
| 3 | | K**D**AFWDRCLSVINLMSSKMLQINA |  | | 28 | | | KEAFWDRCL**Y**VINLMSSKMLQINA | |
| 4 | | K**N**AFWDRCLSVINLMSSKMLQINA |  | | 29 | | | KEAFWDRCL**M**VINLMSSKMLQINA | |
| 5 | | K**Q**AFWDRCLSVINLMSSKMLQINA |  | | 30 | | | KEAFWDRCLS**A**INLMSSKMLQINA | |
| 6 | | KE**G**FWDRCLSVINLMSSKMLQINA |  | | 31 | | | KEAFWDRCLS**G**INLMSSKMLQINA | |
| 7 | | KE**L**FWDRCLSVINLMSSKMLQINA |  | | 32 | | | KEAFWDRCLS**L**INLMSSKMLQINA | |
| 8 | | KE**I**FWDRCLSVINLMSSKMLQINA |  | | 33 | | | KEAFWDRCLS**I**INLMSSKMLQINA | |
| 9 | | KE**V**FWDRCLSVINLMSSKMLQINA |  | | 34 | | | KEAFWDRCLSV**L**NLMSSKMLQINA | |
| 10 | | KE**M**FWDRCLSVINLMSSKMLQINA |  | | 35 | | | KEAFWDRCLSV**V**NLMSSKMLQINA | |
| 11 | | KE**S**FWDRCLSVINLMSSKMLQINA |  | | 36 | | | KEAFWDRCLSV**A**NLMSSKMLQINA | |
| 12 | | KEA**Y**WDRCLSVINLMSSKMLQINA |  | | 37 | | | KEAFWDRCLSV**G**NLMSSKMLQINA | |
| 13 | | KEA**W**WDRCLSVINLMSSKMLQINA |  | | 38 | | | KEAFWDRCLSVI**Q**LMSSKMLQINA | |
| 14 | | KEAF**F**DRCLSVINLMSSKMLQINA |  | | 39 | | | KEAFWDRCLSVI**E**LMSSKMLQINA | |
| 15 | | KEAF**Y**DRCLSVINLMSSKMLQINA |  | | 40 | | | KEAFWDRCLSVI**D**LMSSKMLQINA | |
| 16 | | KEAFW**E**RCLSVINLMSSKMLQINA |  | | 41 | | | KEAFWDRCLSVIN**I**MSSKMLQINA | |
| 17 | | KEAFW**Q**RCLSVINLMSSKMLQINA |  | | 42 | | | KEAFWDRCLSVIN**V**MSSKMLQINA | |
| 18 | | KEAFW**N**RCLSVINLMSSKMLQINA |  | | 43 | | | KEAFWDRCLSVIN**A**MSSKMLQINA | |
| 19 | | KEAFWD**K**CLSVINLMSSKMLQINA |  | | 44 | | | KEAFWDRCLSVIN**G**MSSKMLQINA | |
| 20 | | KEAFWDR**A**LSVINLMSSKMLQINA |  | | 45 | | | KEAFWDRCLSVINL**S**SSKMLQINA | |
| 21 | | KEAFWDR**M**LSVINLMSSKMLQINA |  | | 46 | | | KEAFWDRCLSVINL**A**SSKMLQINA | |
| 22 | | KEAFWDRC**I**SVINLMSSKMLQINA |  | | 47 | | | KEAFWDRCLSVINL**C**SSKMLQINA | |
| 23 | | KEAFWDRC**V**SVINLMSSKMLQINA |  | | 48 | | | KEAFWDRCLSVINLM**T**SKMLQINA | |
| 24 | | KEAFWDRC**A**SVINLMSSKMLQINA |  | | 49 | | | KEAFWDRCLSVINLM**Y**SKMLQINA | |
| 25 | | KEAFWDRC**G**SVINLMSSKMLQINA |  | | 50 | | | KEAFWDRCLSVINLM**A**SKMLQINA | |
| 51 | | KEAFWDRCLSVINLMMSKMLQINA | | |  | | 66 | KEAFWDRCLSVINLMSSKML**D**INA | |
| 52 | | KEAFWDRCLSVINLMS**T**KMLQINA | | |  | | 67 | KEAFWDRCLSVINLMSSKMLQ**L**NA | |
| 53 | | KEAFWDRCLSVINLMS**Y**KMLQINA | | |  | | 68 | KEAFWDRCLSVINLMSSKMLQ**V**NA | |
| 54 | | KEAFWDRCLSVINLMS**A**KMLQINA | | |  | | 69 | KEAFWDRCLSVINLMSSKMLQ**A**NA | |
| 55 | | KEAFWDRCLSVINLMS**M**KMLQINA | | |  | | 70 | KEAFWDRCLSVINLMSSKMLQ**G**NA | |
| 56 | | KEAFWDRCLSVINLMSS**R**MLQINA | | |  | | 71 | KEAFWDRCLSVINLMSSKMLQI**D**A | |
| 57 | | KEAFWDRCLSVINLMSSK**S**LQINA | | |  | | 72 | KEAFWDRCLSVINLMSSKMLQI**Q**A | |
| 58 | | KEAFWDRCLSVINLMSSK**A**LQINA | | |  | | 73 | KEAFWDRCLSVINLMSSKMLQI**E**A | |
| 59 | | KEAFWDRCLSVINLMSSK**C**LQINA | | |  | | 74 | KEAFWDRCLSVINLMSSKMLQIN**G** | |
| 60 | | KEAFWDRCLSVINLMSSKM**I**QINA | | |  | | 75 | KEAFWDRCLSVINLMSSKMLQIN**I** | |
| 61 | | KEAFWDRCLSVINLMSSKM**V**QINA | | |  | | 76 | KEAFWDRCLSVINLMSSKMLQIN**L** | |
| 62 | | KEAFWDRCLSVINLMSSKM**A**QINA | | |  | | 77 | KEAFWDRCLSVINLMSSKMLQIN**V** | |
| 63 | | KEAFWDRCLSVINLMSSKM**G**QINA | | |  | | 78 | KEAFWDRCLSVINLMSSKMLQIN**M** | |
| 64 | | KEAFWDRCLSVINLMSSKML**N**INA | | |  | | 79 | KEAFWDRCLSVINLMSSKMLQIN**S** | |
| 65 | | KEAFWDRCLSVINLMSSKML**E**INA | | |  | |  |  | |

**Supplementary Table 2.** Raw data for testing p5 peptide mimetics against CDK5/p25 phosphotransferase activity.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Assay Conditions** | | **Peptide Sequence** | | **Assay Results (cpm)** | | **Corrected Values (cpm)** | **% Activity** | | **% Change** |
| Blank (-substrate) | |  | | 1217 | | 0 |  | |  |
| Control (-peptide) | | Control Substrate / Histone H1 | | 202940 | | 201723 |  | |  |
| **+ Test Peptide-1** | | **KEAFWDRCLSVINLMSSKMLQINA** | | **122384** | | **121167** | **100** | | **0** |
| + Test Peptide-2 | | REAFWDRCLSVINLMSSKMLQINA | | 156648 | | 155431 | 128 | | 28 |
| + Test Peptide-3 | | KDAFWDRCLSVINLMSSKMLQINA | | 146938 | | 145721 | 120 | | 20 |
| + Test Peptide-4 | | KNAFWDRCLSVINLMSSKMLQINA | | 124190 | | 122973 | 101 | | 1 |
| + Test Peptide-5 | | KQAFWDRCLSVINLMSSKMLQINA | | 168535 | | 167318 | 138 | | 38 |
| + Test Peptide-6 | | KEGFWDRCLSVINLMSSKMLQINA | | 187831 | | 186614 | 154 | | 54 |
| + Test Peptide-7 | | KELFWDRCLSVINLMSSKMLQINA | | 192028 | | 190811 | 157 | | 57 |
| + Test Peptide-8 | | KEIFWDRCLSVINLMSSKMLQINA | | 167466 | | 166249 | 137 | | 37 |
| + Test Peptide-9 | | KEVFWDRCLSVINLMSSKMLQINA | | 177002 | | 175785 | 145 | | 45 |
| + Test Peptide-10 | | KEMFWDRCLSVINLMSSKMLQINA | | 170065 | | 168848 | 139 | | 39 |
| + Test Peptide-11 | | KESFWDRCLSVINLMSSKMLQINA | | 164479 | | 163262 | 135 | | 35 |
| + Test Peptide-12 | | KEAYWDRCLSVINLMSSKMLQINA | | 172533 | | 171316 | 141 | | 41 |
| + Test Peptide-13 | | KEAWWDRCLSVINLMSSKMLQINA | | 153371 | | 152154 | 126 | | 26 |
| + Test Peptide-14 | | KEAFFDRCLSVINLMSSKMLQINA | | 142285 | | 141068 | 116 | | 16 |
| + Test Peptide-15 | | KEAFYDRCLSVINLMSSKMLQINA | | 112882 | | 111665 | 92 | | -8 |
| + Test Peptide-16 | | KEAFWERCLSVINLMSSKMLQINA | | 136465 | | 135248 | 112 | | 12 |
| + Test Peptide-17 | | KEAFWQRCLSVINLMSSKMLQINA | | 152314 | | 151097 | 125 | | 25 |
| + Test Peptide-18 | | KEAFWNRCLSVINLMSSKMLQINA | | 150645 | | 149428 | 123 | | 23 |
| + Test Peptide-19 | | KEAFWDKCLSVINLMSSKMLQINA | | 167462 | | 166245 | 137 | | 37 |
| + Test Peptide-20 | | KEAFWDRALSVINLMSSKMLQINA | | 122856 | | 121639 | 100 | | 0 |
| + Test Peptide-21 | | KEAFWDRMLSVINLMSSKMLQINA | | 186988 | | 185771 | 153 | | 53 |
| + Test Peptide-22 | | KEAFWDRCISVINLMSSKMLQINA | | 166459 | | 165242 | 136 | | 36 |
| + Test Peptide-23 | | KEAFWDRCVSVINLMSSKMLQINA | | 182665 | | 181448 | 150 | | 50 |
| + Test Peptide-24 | | KEAFWDRCASVINLMSSKMLQINA | | 172798 | | 171581 | 142 | | 42 |
| + Test Peptide-25 | | KEAFWDRCGSVINLMSSKMLQINA | | 156896 | | 155679 | 128 | | 28 |
| + Test Peptide-26 | | KEAFWDRCLAVINLMSSKMLQINA | | 205714 | | 204497 | 169 | | 69 |
| + Test Peptide-27 | | KEAFWDRCLTVINLMSSKMLQINA | | 190765 | | 189548 | 156 | | 56 |
| + Test Peptide-28 | | KEAFWDRCLYVINLMSSKMLQINA | | 142529 | | 141312 | 117 | | 17 |
| + Test Peptide-29 | | KEAFWDRCLMVINLMSSKMLQINA | | 142424 | | 141207 | 117 | | 17 |
| + Test Peptide-30 | | KEAFWDRCLSAINLMSSKMLQINA | | 185699 | | 184482 | 152 | | 52 |
| + Test Peptide-31 | | KEAFWDRCLSGINLMSSKMLQINA | | 187315 | | 186098 | 154 | | 54 |
| + Test Peptide-32 | | KEAFWDRCLSLINLMSSKMLQINA | | 199120 | | 197903 | 163 | | 63 |
| + Test Peptide-33 | | KEAFWDRCLSIINLMSSKMLQINA | | 124974 | | 123757 | 102 | | 2 |
| + Test Peptide-34 | | KEAFWDRCLSVLNLMSSKMLQINA | | 153154 | | 151937 | 125 | | 25 |
| + Test Peptide-35 | | KEAFWDRCLSVVNLMSSKMLQINA | | 193823 | | 192606 | 159 | | 59 |
| + Test Peptide-36 | | KEAFWDRCLSVANLMSSKMLQINA | | 187307 | | 186090 | 154 | | 54 |
| + Test Peptide-37 | | KEAFWDRCLSVGNLMSSKMLQINA | | 165371 | | 164154 | 135 | | 35 |
| + Test Peptide-38 | | KEAFWDRCLSVIQLMSSKMLQINA | | 155334 | | 154117 | 127 | | 27 |
| + Test Peptide-39 | | KEAFWDRCLSVIELMSSKMLQINA | | 197661 | | 196444 | 162 | | 62 |
| + Test Peptide-40 | | KEAFWDRCLSVIDLMSSKMLQINA | | 200068 | | 198851 | 164 | | 64 |
| + Test Peptide-41 | | KEAFWDRCLSVINIMSSKMLQINA | | 143633 | | 142416 | 118 | | 18 |
| + Test Peptide-42 | | KEAFWDRCLSVINVMSSKMLQINA | | 146527 | | 145310 | 120 | | 20 |
| + Test Peptide-43 | | KEAFWDRCLSVINAMSSKMLQINA | | 173515 | | 172298 | 142 | | 42 |
| + Test Peptide-44 | | KEAFWDRCLSVINGMSSKMLQINA | | 177243 | | 176026 | 145 | | 45 |
| + Test Peptide-45 | | KEAFWDRCLSVINLSSSKMLQINA | | 183234 | | 182017 | 150 | | 50 |
| + Test Peptide-46 | | KEAFWDRCLSVINLASSKMLQINA | | 194724 | | 193507 | 160 | | 60 |
| + Test Peptide-47 | | KEAFWDRCLSVINLCSSKMLQINA | | 193067 | | 191850 | 158 | | 58 |
| + Test Peptide-48 | | KEAFWDRCLSVINLMTSKMLQINA | | 127668 | | 126451 | 104 | | 4 |
| + Test Peptide-49 | | KEAFWDRCLSVINLMYSKMLQINA | | 157714 | | 156497 | 129 | | 29 |
| + Test Peptide-50 | | KEAFWDRCLSVINLMASKMLQINA | | 156192 | | 154975 | 128 | | 28 |
| + Test Peptide-51 | | KEAFWDRCLSVINLMMSKMLQINA | | 175604 | | 174387 | 144 | | 44 |
| + Test Peptide-52 | | KEAFWDRCLSVINLMSTKMLQINA | | 196794 | | 195577 | 161 | | 61 |
| + Test Peptide-53 | | KEAFWDRCLSVINLMSYKMLQINA | | 154123 | | 152906 | 126 | | 26 |
| + Test Peptide-54 | | KEAFWDRCLSVINLMSAKMLQINA | | 195867 | | 194650 | 161 | | 61 |
| + Test Peptide-55 | | KEAFWDRCLSVINLMSMKMLQINA | | 172003 | | 170786 | 141 | | 41 |
| + Test Peptide-56 | | KEAFWDRCLSVINLMSSRMLQINA | | 157109 | | 155892 | 129 | | 29 |
| + Test Peptide-57 | | KEAFWDRCLSVINLMSSKSLQINA | | 176732 | | 175515 | 145 | | 45 |
| + Test Peptide-58 | | KEAFWDRCLSVINLMSSKALQINA | | 171376 | | 170159 | 140 | | 40 |
| + Test Peptide-59 | | KEAFWDRCLSVINLMSSKCLQINA | | 151534 | | 150317 | 124 | | 24 |
| + Test Peptide-60 | | KEAFWDRCLSVINLMSSKMIQINA | | 197635 | | 196418 | 162 | | 62 |
| + Test Peptide-61 | | KEAFWDRCLSVINLMSSKMVQINA | | 142990 | | 141773 | 117 | | 17 |
| + Test Peptide-62 | | KEAFWDRCLSVINLMSSKMAQINA | | 204486 | | 203269 | 168 | | 68 |
| + Test Peptide-63 | | KEAFWDRCLSVINLMSSKMGQINA | 168154 | 166937 | | 138 | 38 | |
| + Test Peptide-64 | | KEAFWDRCLSVINLMSSKMLNINA | 218310 | 217093 | | 179 | 79 | |
| + Test Peptide-65 | | KEAFWDRCLSVINLMSSKMLEINA | 195503 | 194286 | | 160 | 60 | |
| + Test Peptide-66 | | KEAFWDRCLSVINLMSSKMLDINA | 201067 | 199850 | | 165 | 65 | |
| + Test Peptide-67 | | KEAFWDRCLSVINLMSSKMLQLNA | 158044 | 156827 | | 129 | 29 | |
| + Test Peptide-68 | | KEAFWDRCLSVINLMSSKMLQVNA | 169128 | 167911 | | 139 | 39 | |
| + Test Peptide-69 | | KEAFWDRCLSVINLMSSKMLQANA | 179449 | 178232 | | 147 | 47 | |
| + Test Peptide-70 | | KEAFWDRCLSVINLMSSKMLQGNA | 208411 | 207194 | | 171 | 71 | |
| + Test Peptide-71 | | KEAFWDRCLSVINLMSSKMLQIDA | 200869 | 199652 | | 165 | 65 | |
| + Test Peptide-72 | | KEAFWDRCLSVINLMSSKMLQIQA | 182431 | 181214 | | 150 | 50 | |
| + Test Peptide-73 | | KEAFWDRCLSVINLMSSKMLQIEA | 198393 | 197176 | | 163 | 63 | |
| + Test Peptide-74 | | KEAFWDRCLSVINLMSSKMLQING | 168391 | 167174 | | 138 | 38 | |
| + Test Peptide-75 | | KEAFWDRCLSVINLMSSKMLQINI | 139312 | 138095 | | 114 | 14 | |
| + Test Peptide-76 | | KEAFWDRCLSVINLMSSKMLQINL | 114239 | 113022 | | 93 | -7 | |
| + Test Peptide-77 | | KEAFWDRCLSVINLMSSKMLQINV | 91522 | 90305 | | 75 | -25 | |
| + Test Peptide-78 | | KEAFWDRCLSVINLMSSKMLQINM | 90979 | 89762 | | 74 | -26 | |
| + Test Peptide-79 | | KEAFWDRCLSVINLMSSKMLQINS | 133028 | 131811 | | 109 | 9 | |

**Supplementary Table 3.** Raw data for testing p5-WT peptide against CDK5/p25 phosphotransferase activity.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Assay Conditions** | **Peptide Sequence** | **Assay Results (cpm)** | **Corrected Values (cpm)** | **% Activity** | **% Change** |
| Blank (- substrate) | 1251 | 1220 | 0 | 0 | 0 |
| 1189 |
| Control (- inhibitor) | 129379 | 132051 | 130831 | 100 | 0 |
| 134723 |
| + 1 μM p5-WT peptide | 129952 | 132613 | 131393 | 100 | 0 |
| 135274 |
| + 10 μM p5-WT peptide | 116920 | 115583 | 114363 | 87 | -13 |
| 114246 |
| + 50 μM p5-WT peptide | 105382 | 105238 | 104018 | 80 | -20 |
| 105093 |
| + 100 μM p5-WT peptide | 80592 | 78889 | 77669 | 59 | -41 |
| 77185 |
| + 250 μM p5-WT peptide | 54749 | 55475 | 54255 | 41 | -59 |
| 56201 |
| + 500 μM p5-WT peptide | 38238 | 37205 | 35985 | 28 | -72 |

**Supplementary Table 4.** Raw data for testing p5-WT peptide against CDK5/p35 phosphotransferase activity.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Assay Condition** | **Assay Results**  **(cpm)** | **Average Value**  **(cpm)** | **Corrected Values**  **(cpm)** | **%**  **Activity** | **%**  **Change** |
| Blank (- substrate) | 1326 | 1268 | 0 | 0 | 0 |
| 1209 |
| Control (- inhibitor) | 77463 | 77799 | 76531 | 100 | 0 |
| 78134 |
| + 1 μM p5-WT peptide | 79138 | 79119 | 77851 | 102 | 2 |
| 79100 |
| + 10 μM p5-WT peptide | 77288 | 76416 | 75149 | 98 | -2 |
| 75545 |
| + 50 μM p5-WT peptide | 70149 | 70445 | 69177 | 90 | -10 |
| 70740 |
| + 100 μM p5-WT peptide | 57381 | 55407 | 54139 | 71 | -29 |
| 53432 |
| + 250 μM p5-WT peptide | 38293 | 37005 | 35738 | 47 | -53 |
| 35717 |
| + 500 μM p5-WT peptide | 21026 | 19835 | 18567 | 24 | -76 |
| 18643 |

**Supplementary Table 5**. Raw data for testing p5-WT peptide against Extracellular Regulated Kinase-1 (ERK1) phosphotransferase activity.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Assay Condition** | **Assay Results**  **(cpm)** | **Average Value**  **(cpm)** | **Corrected Values**  **(cpm)** | **%**  **Activity** | **%**  **Change** |
| Blank (- substrate) | 1227 | 1256 | 0 | 0 | 0 |
| 1285 |
| Control (- inhibitor) | 66284 | 67089 | 65833 | 100 | 0 |
| 67894 |
| + 1 μM p5-WT peptide | 65616 | 67081 | 65825 | 100 | 0 |
| 68546 |
| + 10 μM p5-WT peptide | 67151 | 66841 | 65585 | 100 | 0 |
| 66531 |
| + 50 μM p5-WT peptide | 66469 | 65347 | 64091 | 97 | -3 |
| 64226 |
| + 100 μM p5-WT peptide | 64427 | 63256 | 62000 | 94 | -6 |
| 62085 |
| + 250 μM p5-WT peptide | 59284 | 59682 | 58426 | 89 | -11 |
| 60080 |
| + 500 μM p5-WT peptide | 52518 | 50688 | 49432 | 75 | -25 |
| 48859 |

**Supplementary Table 6.** Raw data for testing p5-WT peptide against glycogen synthase kinase 3-β phosphotransferase activity.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Assay Condition** | **Assay Results**  **(cpm)** | **Average Value**  **(cpm)** | **Corrected Values**  **(cpm)** | **%**  **Activity** | **%**  **Change** |
| Blank (- substrate) | 1326 | 1273 | 0 | 0 | 0 |
| 1219 |
| Control (- inhibitor) | 101860 | 102739 | 101466 | 100 | 0 |
| 103617 |
| + 1 μM p5-WT peptide | 99166 | 99956 | 98683 | 97 | -3 |
| 100745 |
| + 10 μM p5-WT peptide | 100821 | 101485 | 100213 | 99 | -1 |
| 102150 |
| + 50 μM p5-WT peptide | 102179 | 103221 | 101948 | 100 | 0 |
| 104263 |
| + 100 μM p5-WT peptide | 111971 | 110860 | 109588 | 108 | 8 |
| 109749 |
| + 250 μM p5-WT peptide | 122527 | 121666 | 120393 | 119 | 19 |
| 120804 |
| + 500 μM p5-WT peptide | 126259 | 126673 | 125401 | 124 | 24 |
| 127088 |

**Supplementary Table 7.** Raw data for testing p5-MT peptide against CDK5/p25 phosphotransferase activity.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Assay Condition** | **Assay Results**  **(cpm)** | **Average Value**  **(cpm)** | **Corrected Values**  **(cpm)** | **%**  **Activity** | **%**  **Change** |
| Blank (- substrate) | 1455 | 1392 | 0 | 0 | 0 |
| 1329 |
| Control (- inhibitor) | 113724 | 112673 | 111281 | 100 | 0 |
| 111622 |
| + 1 μM p5-MT peptide | 115666 | 115312 | 113920 | 102 | 2 |
| 114957 |
| + 10 μM p5-MT peptide | 104125 | 103375 | 101983 | 92 | -8 |
| 102625 |
| + 50 μM p5-MT peptide | 85730 | 87716 | 86324 | 78 | -22 |
| 89702 |
| + 100 μM p5-MT peptide | 62224 | 61600 | 60208 | 54 | -46 |
| 60976 |
| + 250 μM p5-MT peptide | 32121 | 31758 | 30366 | 27 | -73 |
| 31395 |
| + 500 μM p5-MT peptide | 18357 | 18284 | 16892 | 15 | -85 |
| 18210 |

**Supplementary Table 8.** Raw data for testing p5-MT peptide against CDK5/p35 phosphotransferase activity.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Assay Condition** | **Assay Results**  **(cpm)** | **Average Value**  **(cpm)** | **Corrected Values**  **(cpm)** | **%**  **Activity** | **%**  **Change** |
| Blank (- substrate) | 1126 | 1211 | 0 | 0 | 0 |
| 1295 |
| Control (- inhibitor) | 74497 | 75110 | 73900 | 100 | 0 |
| 75723 |
| + 1 μM p5-MT peptide | 73470 | 73227 | 72017 | 97 | -3 |
| 72984 |
| + 10 μM p5-MT peptide | 67122 | 64395 | 63185 | 86 | -14 |
| 61669 |
| + 50 μM p5-MT peptide | 50285 | 49187 | 47976 | 65 | -35 |
| 48089 |
| + 100 μM p5-MT peptide | 33565 | 32961 | 31751 | 43 | -57 |
| 32358 |
| + 250 μM p5-MT peptide | 21802 | 21382 | 20172 | 27 | -73 |
| 20962 |
| + 500 μM p5-MT peptide | 13530 | 12965 | 11755 | 16 | -84 |
| 12400 |

**Supplementary Table 9.** Raw data for testing p5-MT peptide against extracellular regulated kinase-1 phosphotransferase activity.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Assay Condition** | **Assay Results**  **(cpm)** | **Average Value**  **(cpm)** | **Corrected Values**  **(cpm)** | **%**  **Activity** | **%**  **Change** |
| Blank (- substrate) | 1265 | 1297 | 0 | 0 | 0 |
| 1328 |
| Control (- inhibitor) | 61974 | 61638 | 60341 | 100 | 0 |
| 61302 |
| + 1 μM p5-MT peptide | 61549 | 62009 | 60713 | 101 | 1 |
| 62470 |
| + 10 μM p5-MT peptide | 60859 | 61359 | 60063 | 100 | 0 |
| 61860 |
| + 50 μM p5-MT peptide | 60885 | 60659 | 59362 | 98 | -2 |
| 60432 |
| + 100 μM p5-MT peptide | 54137 | 52548 | 51252 | 85 | -15 |
| 50960 |
| + 250 μM p5-MT peptide | 40455 | 40552 | 39255 | 65 | -35 |
| 40649 |
| + 500 μM p5-MT peptide | 30163 | 29044 | 27748 | 46 | -54 |
| 27926 |

**Supplementary Table 10.** Raw data for testing p5-MT peptide against glycogen synthase kinase 3-β phosphotransferase activity.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Assay Condition** | **Assay Results**  **(cpm)** | **Average Value**  **(cpm)** | **Corrected Values**  **(cpm)** | **%**  **Activity** | **%**  **Change** |
| Blank (- substrate) | 1174 | 1191 | 0 | 0 | 0 |
| 1207 |
| Control (- inhibitor) | 83250 | 85213 | 84022 | 100 | 0 |
| 87176 |
| + 1 μM p5-MT peptide | 86357 | 84612 | 83421 | 99 | -1 |
| 82867 |
| + 10 μM p5-MT peptide | 89087 | 88071 | 86880 | 103 | 3 |
| 87055 |
| + 50 μM p5-MT peptide | 87753 | 90044 | 88854 | 106 | 6 |
| 92335 |
| + 100 μM p5-MT peptide | 97206 | 97579 | 96388 | 115 | 15 |
| 97952 |
| + 250 μM p5-MT peptide | 107366 | 108191 | 107001 | 127 | 27 |
| 109016 |
| + 500 μM p5-MT peptide | 119386 | 118408 | 117217 | 140 | 40 |
| 117430 |