

Online Supporting Information S7. Independent dataset for studying the Arg-methylation. It contains 75 samples, of which 20 are positive and 55 negative. None of the samples listed here occurs in Online Supporting Information S3.

| Sample # | Protein ID | Site | Sequences |
|----------|------------|------|-----------------------|
| 1 | P62805 | 4 | MMMSG R GKGGK |
| 2 | Q28009 | 211 | QDRGG R GRGGG |
| 3 | Q28009 | 213 | RGG R RGGGGG |
| 4 | Q28009 | 229 | GGYEP R GRGGG |
| 5 | Q28009 | 231 | YEPRG R GGGRG |
| 6 | Q28009 | 235 | GRGGG R GGRGG |
| 7 | Q28009 | 238 | GGRGG R GGMGG |
| 8 | Q28009 | 246 | MGGSD R GGFNK |
| 9 | Q28009 | 460 | YGDDR R GGRGG |
| 10 | Q28009 | 463 | DRRG R GGYDR |
| 11 | Q28009 | 468 | RGGYD R GGYRG |
| 12 | Q28009 | 472 | DRGGY R GRGGD |
| 13 | Q28009 | 474 | GGYR R GGDRG |
| 14 | Q28009 | 478 | GRGGD R GGFRG |
| 15 | Q28009 | 482 | DRGGF R GGRGG |
| 16 | Q28009 | 370 | GGNG R GGRGR |
| 17 | Q28009 | 373 | NGRGG R GRGGP |
| 18 | Q28009 | 375 | RGG R RGGPMG |
| 19 | Q28009 | 381 | GGPM R GGYGG |
| 20 | Q28009 | 394 | SGGG R GGFPS |
| 21 | Q28009 | 409 | GGGQ R AGDWK |
| 22 | Q28009 | 428 | MNFSW R NECNQ |
| 23 | P62805 | 18 | KGGAK R HRKVL |
| 24 | P62805 | 20 | GAKR R HKVLRD |
| 25 | P62805 | 24 | HRKV L RDNIQG |
| 26 | P62805 | 36 | TKPA I RRLARR |
| 27 | P62805 | 37 | KPA I RRLARRG |
| 28 | P62805 | 40 | IR L ARRGGVK |
| 29 | P62805 | 46 | RGGV K RISGLI |
| 30 | P62805 | 56 | IYEET R GV LKV |
| 31 | P62805 | 68 | LENV I RDV TY |
| 32 | P62805 | 79 | TEHAK R KTVTA |
| 33 | P62805 | 93 | VYAL K RQGRTL |
| 34 | P62805 | 96 | LKRQ R TLYGF |
| 35 | P10651 | 9 | TKQ T ARKSTGG |
| 36 | P10651 | 27 | ASKA A RKAAPA |
| 37 | P10651 | 41 | VKKP H YRPPT |
| 38 | P10651 | 43 | KPH R YRPPTVA |
| 39 | P10651 | 50 | PTVAL R EIRRY |
| 40 | P10651 | 53 | ALRE I RRYQKS |
| 41 | P10651 | 54 | LRE I RRYQKST |
| 42 | P10651 | 64 | TELL I RKLPFQ |
| 43 | P10651 | 70 | KLPF O RLVREI |
| 44 | P10651 | 73 | FQ R LVREIAQD |
| 45 | P10651 | 84 | FKTDL R FQSSA |

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|----|--------|-----|--------------|
| 46 | P10651 | 117 | AIHGKRVTIQP |
| 47 | P10651 | 129 | DMQLARRLRGE |
| 48 | P10651 | 130 | MQLARRLRGER |
| 49 | P10651 | 132 | LARRLRGERS |
| 50 | P10651 | 135 | RLRGERSSSS |
| 51 | P68429 | 9 | TKQTARKSTGG |
| 52 | P68429 | 27 | ATKAARKSAPA |
| 53 | P68429 | 41 | VKKPHRFRPGT |
| 54 | P68429 | 43 | KPHRFRRPGTVA |
| 55 | P68429 | 50 | GTVALREIRKY |
| 56 | P68429 | 53 | ALREIRKYQKS |
| 57 | P68429 | 64 | TELLIRKLPFQ |
| 58 | P68429 | 70 | KLPFQRLVREI |
| 59 | P68429 | 73 | FQRLVREIAQD |
| 60 | P68429 | 84 | FKTDLRFQSSA |
| 61 | P68429 | 117 | AIHAKRVTIMP |
| 62 | P68429 | 129 | DIQLARRIRGE |
| 63 | P68429 | 130 | IQLARRIRGER |
| 64 | P68429 | 132 | LARRIRGERAA |
| 65 | P68429 | 135 | RIRGERAAAAA |
| 66 | Q28009 | 501 | GKMDSRGEHRQ |
| 67 | Q28009 | 505 | SRGEHRQDRRE |
| 68 | Q28009 | 508 | EHRQDRRERP |
| 69 | Q28009 | 509 | HRQDRRERPYY |
| 70 | Q28009 | 511 | QDRRERPYYYY |
| 71 | Q28009 | 256 | KFGGPRDQGS |
| 72 | Q28009 | 261 | RDQGSRHDSEQ |
| 73 | Q28009 | 315 | NLYTDRETGKL |
| 74 | Q28009 | 358 | VSFATRRADFN |
| 75 | Q28009 | 359 | SFATRRADFNR |