Caenorhabditis elegans PRMT-7 and PRMT-9 Are Evolutionarily Conserved Protein Arginine Methyltransferases with Distinct Substrate Specificities*

Andrea Hadjikyriacou and Steven G. Clarke*

Supplementary Table S1

Table S1. Peptide Substrates

Peptide	Sequence	Theoretical average mass (Da)	Observed average mass (Da)
Hs H2B (23-37)	Ac-KKDGKK**R**K**R**S**R**KESY	1936.23	1935.60 [a]
Hs H2B (23-37) R29K	Ac-KKDGKKKK**R**S**R**KESY	1908.21	1908.00 [a]
Hs H2B (23-37) R31K	Ac-KKDGKK**R**KKS**R**KESY	1908.21	1907.80 [a]
Hs H2B (23-37) R33K	Ac-KKDGKK**R**K**R**SKKESY	1908.21	1908.00 [a]
Ce H2B (20-34)	Ac-PKDGKK**RR**HA**R**KESY	1898.14	1898.40 [a]
H4 (1-21)	Ac-SG**R**GKGGKGLGKGGAK**R**H**R**KV	2133.47	2133[f]
H4 (1-21) R3K	Ac-SGKGKGGKGLGKGGAK**R**H**R**KV	2105.46	2105[f]
H4 (1-16)	Ac-SG**R**GKGGKGLGKGGAK	1456.66	1460.97[e]
H4 (14-22)	Ac-GAK**R**H**R**KVL	1106.33	1106.25[a]
H3 (1-7)	Ac-A**R**TKQTA	816.91	816.50[a]
RGR-1	Ac-GGF**R**G**R**G**R**GG	1018.10	1017.11 [a]
p-SmD3	AG**R**G**R**GKAAILKAQVAA**R**G**R**G**R**GMG**R**GN-NH_2	2792.25	2791[b]
p-R1	WGGYS**R**GGYGGW	1302 [d]	1302.8 [e]
p-RPL3	WGTKKLP**R**KTH**R**GL**R**K	1962.36	1961 [b]
GAR (residues 1-145 of human fibrillarin with K2E and A145V substitutions fused at the N-terminal to GST and linker (sequence not shown; see the "Experimental Procedures" section)	MEPGFSP**R**GGGFGG**R**GGFGD**R**GG**R**GG**R**GGFG GG**R**G**R**GGGF**R**G**R**G**R**GGGGGGGGGGGGGG**R**GG GGFHSGGN**R**G**R**G**R**GGK**R**GNQSGKNVMVEPH**R** HEGVFIC**R**GKEDALVTKNLVPGESVYGEK**R**VSI SEGDDKIEY**R**AWNPF**R**SKLV	40881.61 (with GAR) 14589.05 (without GST)	

Table S1. Peptide Substrates, continued

[a]Data provided by GenScript Inc.

[b]Data from Feng, Y., Hadjikyriacou, A., and Clarke, S. G. (2014) Substrate Specificity of Human Protein Arginine Methyltransferase 7 (PRMT7) - The importance of acidic residues in the double E loop. *J. Biol. Chem.* **289**, 32604–32616

[c]Data from California Peptide Research

[d]Data from Lakowski, T. M., and Frankel, A. (2008) A Kinetic Study of Human Protein Arginine N -Methyltransferase 6 Reveals a Distributive Mechanism. *J. Biol. Chem.* **283**, 10015–10025

[e]Determined by MALDI TOF mass spectrometry.

[f]Data from Osborne, T. C., Obianyo, O., Zhang, X., Cheng, X., and Thompson, P. R. (2007) Protein Arginine Methyltransferase 1: Positively Charged Residues in Substrate Peptides Distal to the Site of Methylation are Important for Substrate Binding and Catalysis. *Biochemistry*. **46**, 13370–13381