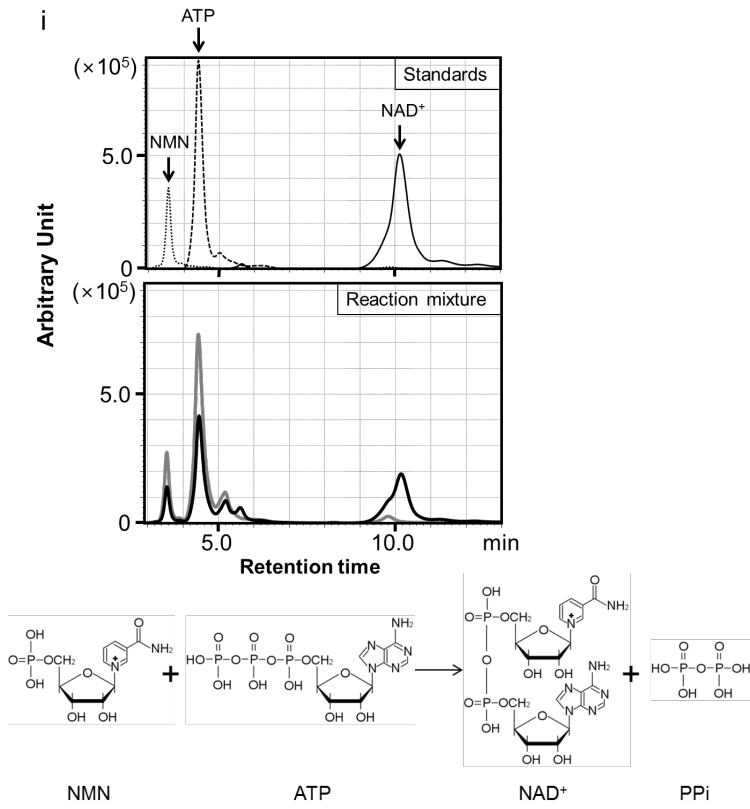


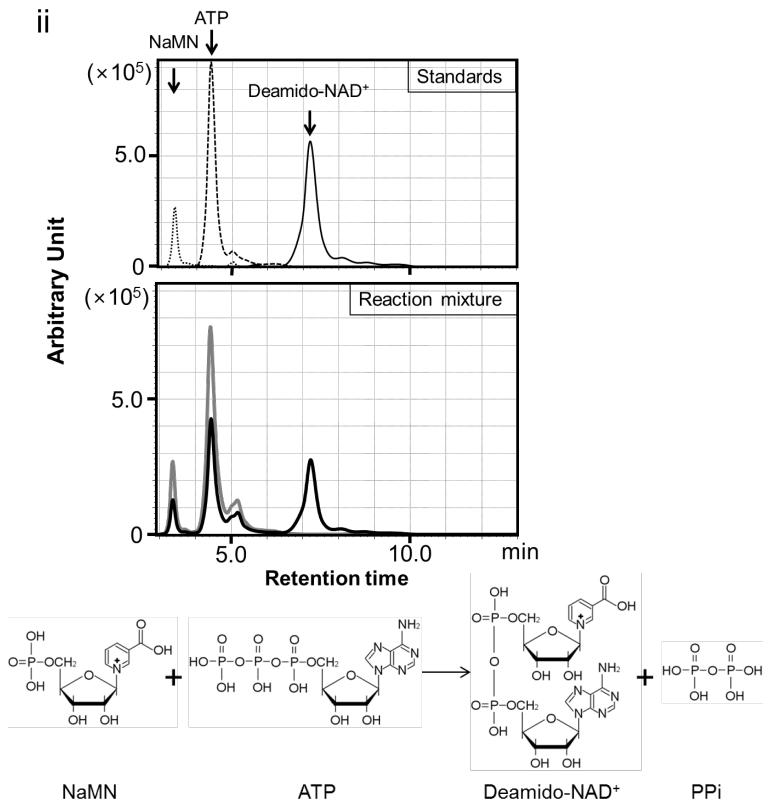
TABLE S1 Primers used in this study.

No.	Primer name	Sequence (5'-3')
1	eTK2284-F	GGGCATATGGACAGGTACGTTCTTCTGGTTAAG
2	eTK2284-R	CCCGGATCCTCACCTCAGACTGAGCGCGTCCCTGAGTA
3	eTK0067-F	AAAAAACATATGGTTAAGCGAGGCCTCTTC
4	eTK0067-R	AAAAAAGGATCCTTAAAATTCTGGAATCCT
5	dTK2284-F	AGGTTTCCTTTTAAACTTTTCGCTTTTCCCC
6	dTK2284-R	GACTCGGGGTGTATCCGCCTGAGCTGGCTCT
7	inv-dTK2284-F	AGGGACGCGCTCAGTCTGAGGTGAGAGCATG
8	inv-dTK2284-R	AGGGAAGTCCCTTCTCATCATCATTGAGCGT
9	o-dTK2284-F	AACAACCTCCAGGCGTTTCATAGCCCCA
10	o-dTK2284-R	GAGGGTTCTTACACAAGTGGAAGAAGGAGG
11	i-dTK2284-F	GACAGGTACGTTCTTCTGGTTAAGGCC
12	i-dTK2284-R	CCTCAGACTGAGCGCGTCCCTGAGTA
13	so-dTK2284-F	ACGACATCGTCCTCTATCCAAGCGGAAAG
14	so-dTK2284-R	GCAACGTGCGGCATCGCCCTCCATGTGTA
15	s-dTK2284-1-f	GACTCTAGAGGATCCCCGGGTAC
16	s-dTK2284-1-r	TCGATTTTTGTGATGCTCGTCA
17	s-dTK2284-2-f	CGCTCAAGTCAGAGGTGGCGAAAC
18	s-dTK2284-2-r	TTGAGATCCTTTTTTCTGCGCGT
19	s-dTK2284-3-f	TTTTGTTTGCAAGCAGCAGATTACG
20	s-dTK2284-3-r	ACTTACTCTAGCTTCCCGGCAACAA
21	s-dTK2284-4-f	AGTTCGCCAGTTAATAGTTTGC
22	s-dTK2284-4-r	GATGCTGAAGATCAGTTGGGTGC
23	s-dTK2284-5-f	TTTTACTTTCCACCAGCGTTTCTG
24	s-dTK2284-5-r	TACAATTTTATGGTGC
25	s-dTK2284-6-f	AACGTTAATATTTTGTTAAAATTG
26	s-dTK2284-6-r	CCCTCTCCCTATCATAAACGTCGA
27	s-dTK2284-7-f	CACTTGAGATAGCGGAGTGCAC
28	s-dTK2284-7-r	GCCTTGATGGCATCACTGGCTTTC
29	s-dTK2284-8-f	CGGTGCTGACTACGTGATAGTCGGG
30	s-dTK2284-8-r	GACCTGCAGGCATGCAAGCTTGGC
31	s-dTK2284-9-f	AGGTTTCCTTTTAAACTTTTCGCT
32	s-dTK2284-9-r	GCAACAAATGGGAACTTTTTGAGAGC
33	s-dTK2284-10-f	GGTTGACATACAGGGGTTTATCCGT
34	s-dTK2284-10-r	AGGGAAGTCCCTTCTCATCATCA
35	s-dTK2284-11-f	AGGGACGCGCTCAGTCTGAGGTGA
36	s-dTK2284-11-r	GCAGTGTGGATCCTAAACGCGGTG
37	s-dTK2284-12-f	CAGGCTCTTCAAATGCCGCCCT
38	s-dTK2284-12-r	GACTCGGGGTGTATCCGCCTGAGCT

A
i



ii



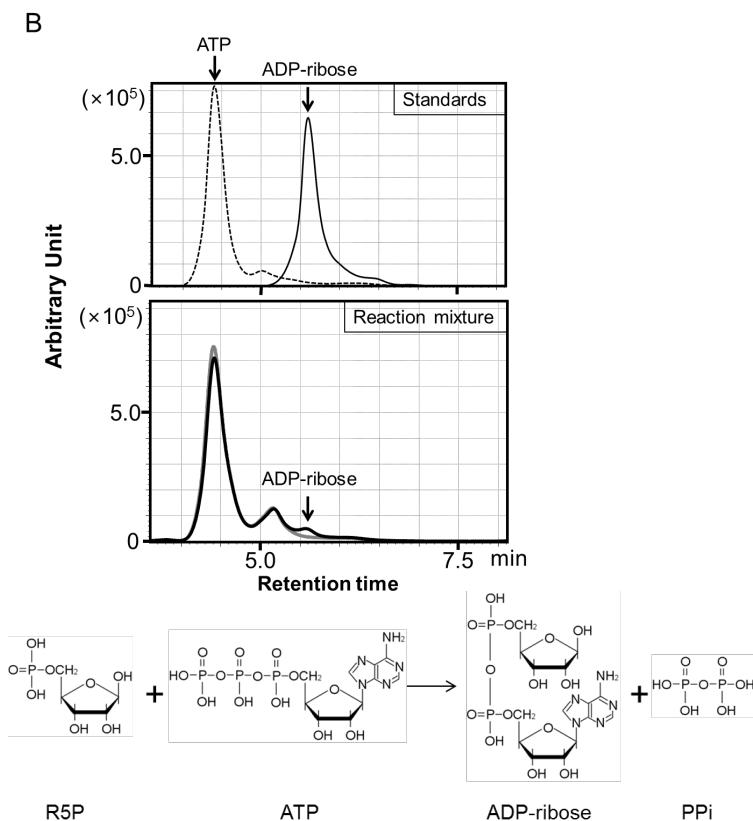


FIG S1 Reactions catalyzed by the TK0067 protein. The upper chromatograms show the results with standard compounds and the lower chromatograms show those of the reaction mixtures, respectively. Chemical reactions are also shown. (A) The two major reactions catalyzed by the TK0067 protein. (i) The reaction from NMN and ATP to NAD^+ and PPi . Upper chromatogram: thin solid line, 2 mM NAD^+ ; thin dashed line, 2 mM ATP; thin dotted line, 2 mM NMN. Lower chromatogram: thick solid line, 2 mM NMN and ATP incubated with 1 μg TK0067 protein at 85°C for 10 min; thick gray line, 2 mM NMN and ATP incubated at 85°C for 10 min. (ii) The reaction from NaMN and ATP to deamido- NAD^+ and PPi . Upper: thin solid line, 2 mM deamido- NAD^+ ; thin dashed line, 2 mM ATP; thin dotted line, 2 mM NaMN. Lower: thick solid line, 2 mM NaMN and ATP incubated with 1 μg TK0067 protein at 85°C for 10 min; thick gray line, 2 mM NaMN and ATP incubated at 85°C for 10 min. (B) Side reaction catalyzed by the TK0067 protein converting R5P and ATP to ADP-ribose and PPi . Upper: thin solid line, 2 mM ADP-ribose; thin dashed line, 2 mM ATP. Lower: thick solid line, 2 mM R5P and ATP incubated with 10 μg TK0067 protein at 85°C for 10 min; thick gray line, 2 mM R5P and ATP incubated at 85°C for 10 min.