

**S3 Table.** Proton chemical shifts and the vicinal coupling constants of Tat1\_A4-5,8-9 in H<sub>2</sub>O/D<sub>2</sub>O (9:1) at 298 K.

Residue	Proton chemical shifts [ppm]						<sup>3</sup> J <sub>HNH<math>\alpha</math></sub>
	HN	H $\alpha$	H $\beta$	H $\gamma$	H $\delta$	others	
Gly <sup>1</sup>		3.83					
Arg <sup>2</sup>	8.70	4.32	1.73;1.80	1.62	3.19	$\epsilon$ -NH 7.21	7.2
Lys <sup>3</sup>	8.64	4.27	1.73;1.79	1.44	1.62	H $\epsilon$ 2.98; $\zeta$ -NH <sub>2</sub> 7.53	7.5
Ala <sup>4</sup>	8.51	4.27	1.36				
Ala <sup>5</sup>	8.45	4.26	1.36				
Arg <sup>6</sup>	8.45	4.26	1.74;1.80	1.61	3.18	$\epsilon$ -NH 7.21	
Gln <sup>7</sup>	8.57	4.29	1.96;2.06	2.36		$\epsilon$ -NH <sub>2</sub> 6.95;7.64	7.7
Ala <sup>8</sup>	8.53	4.29	1.37				
Ala <sup>9</sup>	8.44	4.26	1.36				
Arg <sup>10</sup>	8.47	4.60	1.71;1.84	1.68	3.21	$\epsilon$ -NH 7.22	7.9
Pro <sup>11</sup>	-	4.47	1.96;2.32	2.00	3.63;3.82		-
Ser <sup>12</sup>	8.60	4.47	3.88;3.98				8.1
	8.67	4.45	3.92;3.99				8.8
	8.49	4.50	3.86;3.93				