	URN	LS3	CRF	93.8	3.74	2.30	0.15	89.9	2.96	3.04	4.13	13.4	16.0	19.1	16.7	91.2	34.7	
-	SAC	LS5	CRF	93.9	3.52	2.42	0.14	90.0	2.86	2.56	4.55	14.1	15.8	20.0	18.8	91.4	37.2	
-	BON	LS5	CRF	93.7	3.88	2.28	0.16	89.8	2.98	3.06	4.13	13.5	16.2	19.8	16.4	91.1	34.8	
-	BON	BFW	CRF	93.4	4.19	2.24	0.21	89.8	3.00	3.04	4.18	13.1	16.4	19.5	16.8	91.1	32.9	
-	CAT	LS5	CRF	93.7	3.66	2.46	0.18	90.0	2.84	2.55	4.57	13.8	16.1	19.6	18.7	91.4	39.2	
-	BON	BRE	CRF	93.6	3.81	2.37	0.23	89.8	2.98	3.07	4.17	13.1	16.2	19.7	16.6	91.1	36.6	
-	CAT	BFW	CRF	93.5	3.99	2.39	0.16	90.0	2.88	2.59	4.55	13.9	16.1	19.8	17.5	91.3	36.3	
-	URN	BRE	CRF	93.7	3.63	2.39	0.24	89.5	3.11	3.06	4.35	13.4	16.4	20.2	16.9	90.8	35.5	
-	CAU	BFW	CRF	93.5	3.29	2.44	0.74	89.5	3.09	3.08	4.28	13.7	16.5	19.6	16.7	90.9	30.9	
-	SAC	BRE	CRF	93.6	3.74	2.46	0.18	89.9	2.87	2.54	4.69	14.0	16.5	20.8	18.9	91.3	40.6	
-	CAU	BRE	CRF	93.6	3.45	2.45	0.46	89.5	3.07	2.99	4.42	13.9	16.5	20.7	17.4	90.8	36.8	
-	CAU	LS3	CRF	93.5	3.74	2.46	0.30	89.4	3.11	3.04	4.42	13.4	16.8	20.5	17.8	90.7	34.0	
-	SAC	BFW	CRF	93.5	3.56	2.50	0.44	89.6	2.98	2.55	4.83	15.0	16.8	21.0	19.5	91.1	34.2	
-	URN	LS1	CRF	93.4	4.11	2.34	0.18	89.2	3.20	3.24	4.38	13.8	17.3	21.0	17.5	90.6	34.3	
-	BON	LS3	CRF	93.9	3.48	2.35	0.27	89.2	3.20	3.05	4.58	14.1	18.0	21.9	18.2	90.5	35.1	
-	MIN	LS5	CRF	93.5	3.78	2.53	0.16	89.2	3.09	2.61	5.05	14.6	17.6	21.7	19.7	90.8	37.5	
-	MIN	BRE	CRF	93.5	3.79	2.56	0.17	89.0	3.16	2.65	5.16	15.0	17.9	22.6	19.7	90.5	39.6	
-	CAU	LS1	CRF	93.6	3.85	2.42	0.08	88.2	3.51	3.34	4.91	15.2	19.3	23.4	19.7	89.7	33.8	
-	BON	LS1	CRF	93.6	4.00	2.37	0.04	88.0	3.59	3.62	4.76	15.2	19.2	23.7	18.8	89.6	35.6	
-	SAC	LS3	CRF	92.9	3.60	2.76	0.73	89.2	3.07	2.52	5.16	15.7	17.9	22.0	21.0	90.8	35.0	
-	MIN	BFW	CRF	93.4	3.54	2.69	0.40	88.5	3.39	2.76	5.37	16.3	18.7	22.8	20.7	90.1	36.0	
-	CAT	LS3	CRF	92.7	3.78	2.85	0.63	89.3	3.05	2.58	5.11	15.5	17.6	22.2	21.2	90.8	37.6	
-	URN	URN	CRF	93.1	3.86	2.72	0.27	88.4	3.46	3.14	5.02	15.5	19.0	23.3	18.9	89.9	36.9	
-	CAT	BRE	CRF	92.7	4.42	2.74	0.12	88.8	3.07	2.46	5.69	16.9	18.3	24.1	20.9	90.4	43.3	
-	CAU	CAT	СТС	91.3	6.08	2.44	0.18	85.6	4.29	4.99	5.12	13.3	17.6	19.8	15.6	87.8	11.9	
-	URN	CAT	CRF	92.7	4.18	2.69	0.44	88.4	3.46	3.16	5.01	15.8	19.8	23.3	19.4	89.8	35.2	
_	MIN	URN	CRF	93.2	3.88	2.82	0.10	88.1	3.43	2.95	5.52	16.5	20.6	26.2	20.9	89.9	43.0	
-	SAC	LS3	СТС	92.0	4.66	2.45	0.94	86.5	3.92	3.73	5.79	14.6	19.2	21.2	18.1	89.0	8.20	
-	CAT	LS1	CRF	93.4	3.91	2.67	0.07	87.8	3.54	2.90	5.79	18.0	21.4	28.5	23.9	89.5	34.3	
	BON	SAC	СТС	91.0	6.52	2.32	0.13	84.3	4.69	5.57	5.38	13.6	18.4	21.8	15.3	86.5	9.14	
-	MIN	CAT	СТС	91.8	5.85	2.27	0.08	86.0	4.17	3.75	6.07	14.7	21.2	24.4	17.5	88.4	8.13	
_	SAC	BRE	СТС	92.2	4.19	2.43	1.18	87.0	3.76	3.77	5.45	14.8	19.3	21.8	19.8	89.5	11.2	
_	MIN	LS1	CRF	92.9	3.94	2.84	0.32	88.3	3.40	2.84	5.49	16.5	20.2	26.0	22.3	89.9	37.1	
_	SAC	LS1	CRF	93.2	4.08	2.63	0.05	87.8	3.56	2.99	5.68	17.7	21.9	27.9	23.3	89.5	35.9	
_	BON	LS5	СТС	90.9	6.00	2.65	0.41	85.0	4.50	5.40	5.06	13.0	17.1	21.2	15.8	87.4	9.06	
_	SAC	LS5	СТС	91.5	5.38	2.63	0.48	86.4	3.99	3.97	5.67	14.2	20.0	21.4	18.3	88.9	8.35	
_	BON	BFW	СТС	90.5	6.64	2.62	0.24	84.3	4.85	5.58	5.24	13.4	18.0	21.3	16.4	86.7	7.96	
_	BON	CAT	СТС	90.0	7.48	2.32	0.18	83.5	5.01	5.67	5.84	13.7	17.8	21.5	14.7	85.5	7.96	
-	CAU	URN	CRF	92.6	4.64	2.52	0.24	87.5	3.73	3.53	5.18	15.5	20.2	26.0	19.9	89.3	41.4	
-	BON	CAT	CRF	93.3	4.04	2.59	0.05	87.5	3.79	3.68	5.04	16.2	21.2	28.1	21.5	88.4	46.2	
-	CAT	LS3	СТС	91.4	5.58	2.38	0.60	85.3	4.40	4.39	5.90	14.5	21.2	21.9	17.7	87.8	7.12	
-	CAU	SAC	СТС	90.7	6.73	2.37	0.22	84.2	4.96	5.09	5.78	14.0	20.2	22.7	15.8	86.3	8.10	
-	CAU	CAT	CRF	92.8	4.56	2.48	0.18	87.6	3.73	3.33	5.28	17.4	22.0	27.1	20.3	88.6	40.9	
-	CAT	LS5	СТС	91.2	5.67	2.69	0.45	85.9	4.16	3.87	6.02	14.6	20.7	23.3	18.5	88.5	8.05	
-	SAC	CAT	СТС	92.1	5.47	2.32	0.15	86.0	4.07	3.77	6.16	16.0	25.2	29.4	20.2	88.4	8.00	
-	CAT	CAT	CRF	92.7	4.39	2.77	0.14	87.9	3.49	3.04	5.58	17.1	23.6	30.1	27.0	89.1	49.0	
-	MIN	CAT	CRF	92.7	4.30	2.87	0.08	87.6	3.55	2.95	5.89	18.7	23.3	30.0	23.3	89.0	44.9	
-	MIN	BFW	CTC	91.6	4.72	2.50	1.20	85.3	4.50	3.75	6.40	15.0	20.2	23.6	19.4	87.8	5.57	
-	URN	LS3	CTC	91.9	4.81	2.92	0.33	87.8	3.04	1.75	7.43	26.3	24.8	30.3	30.9	90.3	10.4	
-	MIN	LS3	CRF	92.4	3.76	2.90	0.90	87.5	3.68	2.83	5.95	18.1	21.2	26.8	22.8	89.3	36.6	
-	URN	CAT	CTC	90.5	6.36	2.84	0.26	84.8	4.67	4.78	5.70	14.2	19.1	21.6	16.9	87.2	10.8	
-	MIN	LS5	CTC	-	5.63			85.1	4.54	3.91	6.42	-				87.6	7.99	
-	BON	BRE	CTC	90.1	6.54	2.86	0.54	84.2	4.88	5.54	5.39	13.5	18.1	21.5	16.6	86.6	12.8	
-	MIN	BRE	CTC	-	4.74			85.4	4.47	3.91	6.18	14.5	20.7	23.3	19.4	88.0	10.3	
-		LS5		91.7	2.59	2.96	2.71	87.2	3.17	1.72	7.93	26.9	27.4	30.2	31.6	89.8	9.64	
-		SAC		-	4.95			-		3.35		18.7				88.8		
-		LS3		-	3.65			-		1.68		-		32.2		-	9.62	
-		SAC		-	3.44			-		3.01		-		31.3		-	9.23	
-		LS5		-	2.91			-		1.88		-		32.3		-	9.96	
-		SAC		90.9		2.16		-		4.78				27.9		-	5.67	
-				-	3.61			-		3.43		20.1				-	47.3	
-				-	5.32			-		3.65		-		30.6		-	10.1	
-		URN		-	12.3			-		7.09		-		22.2		-	8.85	
-		URN		-	4.52			-		3.28		17.6		29.0		-	45.8	
-		BRE		-	2.91			-		1.98		-		30.8	_		11.5	
-		LS1		-	15.0			-		6.66		-		22.9	ш	-	8.20	
-		SAC		-	4.11			-		3.28		-		30.4		-	48.0	
-		URN LG1		-	4.25			-		3.76		-		28.4		-	41.4	
-		LS1		-	9.14			-		4.49 2.03		-		24.2		-	8.08	
-		BFW LS1		-	2.38			-		<ul><li>2.03</li><li>5.19</li></ul>		-		32.0		-	<ul><li>9.10</li><li>5.62</li></ul>	
-		LS1		-	12.2		=	-				-		24.6		-		
-		LS1 BFW		-	<ul><li>11.3</li><li>7.12</li></ul>			-		<ul><li>5.13</li><li>4.48</li></ul>		-		<ul><li>25.5</li><li>25.2</li></ul>		-	<ul><li>9.10</li><li>5.83</li></ul>	
-		LS3		-	9.08			-		4.48		-		26.4		-		
-				-				-				-				-	7.07	
-		BRE LS1		-	3.26			-		<ul><li>2.17</li><li>1.98</li></ul>		-		32.2 32.0		-	<ul><li>8.32</li><li>7.24</li></ul>	
-		BFW		-	4.88 7.95			-		4.76		-		25.1		-	<ul><li>7.24</li><li>5.71</li></ul>	
-		URN		-	4.64			-		3.25		-		30.9		-	46.8	
-		SAC		-	3.08			-		<ul><li>3.25</li><li>5.22</li></ul>		-		24.9		-	38.9	
-		URN		-	10.2			-		5.22		-		24.9		-	6.08	
-		BFW		-	3.04			-		1.81		_		34.4		-	8.31	
-				-				-		5.06		-				-		
-		URN URN		-	9.78			-		5.06 5.32				<ul><li>26.3</li><li>31.0</li></ul>		-	6.79 4.69	
	111V	VIVIV	$\sim$ 1 $\subset$	O L D	۷.۷	ر کی ت	CO	13.1	/J	J.J.		1U.U	-1.Z	- L.U	/ . Z	02.0		

79.7 6.75 5.32 8.24

84.9 3.70 1.74 9.63

84.9 4.05 2.17 8.87

82.8 5.50 4.82 6.91

83.8 4.08 1.88 10.3

81.5 15.2 3.23 0.05

89.0 6.56 3.80 0.64

89.8 5.40 3.40 1.42

87.9 8.14 3.03 0.94

88.2 5.74 3.83 2.20

MIN URN CTC

CAU LS1 CTC

URN URN CTC

CAT BRE CTC

CAU URN CTC

6.50 - Evaluated 6.50 - Failed alignment 6.50 - Short alignment 6.70 - No prediction

93.9 3.68 2.30 0.15

93.6 3.94 2.25 0.20

- Match - Mismatch - Mismatch - 108

90.0 2.94 2.94 4.14

Convolution - Convolution - CS2 - Encoder - Decoder

CRF

CRF

URN LS5
URN BFW

URN LS3 CRF

- AUC - PhredQ overlap

91.3 32.8

91.3 30.3

82.0 4.69

87.8 7.19

87.7 7.06

85.5 10.1

86.6 6.68

 16.0
 27.2
 31.0
 17.2

30.2 35.4 37.8 32.9

29.5 30.7 32.7 33.4

16.4 23.7 28.1 19.5

35.0 34.7 42.3 35.8

- Adenine - Cytosine - Cytosine - Guanine - Thymine

13.0 16.1 19.3 16.1