

**Table S 1:** List of 45 proteins with known melting temperature analyzed in this study.

<b>Protein</b> PDB code	$T_m^{\text{exp}}$ (°C)	pH	Protein Name	Res. (Å)	Host Organism	$T_{\text{env}}$ (°C)	N	Reference
1aqh	43.7	7.2	$\alpha$ -amylase	2.00	<i>Alteromonas haloplanctis</i>	26.0	448	J Biol Chem 276, 25791 (2001)
1ppi	65.6	7.2	$\alpha$ -amylase	2.20	<i>Sus Scrofa</i>	39.0	496	J Biol Chem 276, 25791 (2001)
1jae	65.9	7.2	$\alpha$ -amylase	1.65	<i>Tenebrio Molitor</i>	28.0	470	J Biol Chem 276, 25791 (2001)
1smd	70.3	7.2	$\alpha$ -amylase	1.60	<i>Homo Sapiens</i>	37.0	495	J Biol Chem 276, 25791 (2001)
1am7	52.3	7.0	Lysozyme	2.30	<i>Bacteriophage Lambda</i>	37.0	150	FEBS Lett 460, 442 (1999)
2lzm	64.8	6.5	Lysozyme	1.70	<i>Escherichia Coli</i>	37.0	164	Nature 334,406 (1988), PNAS 85,401 (1988)
1lz1	64.9	2.7	Lysozyme	1.50	<i>Homo Sapiens</i>	37.0	130	J Mol Biol 254, 62 (1995)
4lyz	74.8	7.0	Lysozyme	2.00	<i>Gallus Gallus</i>	41.0	129	Proteins 40, 49 (2000)
2fal	52.0	7.0	Myoglobin	1.80	<i>Aplysia Limacina</i>	17.0	146	J Mol Biol 297, 1231 (2000)
1ymb	78.3	7.0	Myoglobin	1.90	<i>Equus Caballus</i>	38.0	153	Biochemistry 4, 5075 (2001)
1bvc	82.2	9.6	Myoglobin	1.50	<i>Physeter Catodon</i>	35.0	153	Protein Sci 2, 1099 (1993)
1bc	41.6	7.50	$\beta$ -lactamase	2.20	<i>Staphylococcus Aureus</i>	34.0	257	Biochemistry 33, 116 (1994)
1ke4	54.6	6.80	$\beta$ -lactamase	1.72	<i>Escherichia Coli</i>	37.0	357	Protein Sci 8, 1816 (1999)
4blm	66.0	7.00	$\beta$ -lactamase	2.00	<i>Bacillus Licheniformis</i>	43.0	256	Biochemistry 29, 5797 (1990)
1bmc	51.0	7.00	$\beta$ -lactamase	2.50	<i>Bacillus Cereus</i>	30.0	213	Biochemistry 61, 6603 (1992)
1hml	39.5	7.00	$\alpha$ -lactalbumin	1.70	<i>Homo Sapiens</i>	37.0	123	Biochemistry 28, 8568 (1989)
1hfz	56.2	7.40	$\alpha$ -lactalbumin	2.30	<i>Bos Taurus</i>	38.0	123	Protein Eng 12, 581 (1999)
1hmk	70.8	7.50	$\alpha$ -lactalbumin	2.00	<i>Capra Hircus</i>	39.0	121	Proteins 60, 118 (2005)
2vh7	53.8	5.50	Acylphosphatase	1.45	<i>Homo Sapiens</i>	37.0	99	Proteins 62, 64 (2006)
2bjd	100.8	5.50	Acylphosphatase	1.27	<i>Sulfolobus Solfataricus</i>	80.0	90	Proteins 62, 64 (2006)
1v3z	111.5	7.40	Acylphosphatase	1.72	<i>Pyrococcus Horikoshii</i>	98.0	91	Biochemistry 38, 33 (2005)
1p3j	47.6	7.40	Adenylate kinase	1.90	<i>Bacillus Subtilis</i>	37.0	212	J Bio Chem 279, 28202 (2004)
3fb4	47.6	7.40	Adenylate kinase	2.00	<i>Jeotgalibacillus Marinus</i>	18.0	216	J Bio Chem 279, 28202 (2004)
1s3g	43.4	7.40	Adenylate kinase	2.25	<i>Bacillus Globisporus</i>	15.0	217	J Bio Chem 279, 28202 (2004)
1aky	47.7	7.50	Adenylate kinase	1.96	<i>Saccharomyces Cerevisiae</i>	28.0	218	Eur J Biochem 231, 405 (1995)
1ank	51.8	7.20	Adenylate kinase	2.00	<i>Escherichia Coli</i>	37.0	214	J Biol Chem 266, 23654 (1991)
1zip	74.8	7.20	Adenylate kinase	1.85	<i>Bacillus Stearothermophilus</i>	51.0	217	Biochemistry 31, 3038 (1992)
1oa3	49.2	8.00	Cell 12A	1.70	<i>Hypocrea Schweinitzii</i>	40.0	217	Protein Sci 12, 848 (2003)
1h8v	54.5	8.00	Cell 12A	1.90	<i>Trichoderma Reesei</i>	35.0	217	Protein Sci 12, 2782 (2003)
1oa4	66.8	8.00	Cell 12A	1.50	<i>Streptomyces sp. 11ag8</i>	30.0	222	Protein Sci 12, 848 (2003)

1olr	68.7	8.00	Cell 12A	1.20	<i>Humicola Grisea</i>	50.0	223	Protein Sci 12, 2872 (2003)
1cec	70.4	7.20	Cell 12A	2.15	<i>Clostridium Thermocellum</i>	60.0	331	Biophys Chem 132, 229 (2002)
1csp	53.8	7.00	Cold Shock Protein	2.50	<i>Bacillus Subtilis</i>	37.0	67	J Mol Bio 347, 1063 (2005)
1mjc	57.0	7.00	Cold Shock Protein	2.00	<i>Escherichia Coli</i>	37.0	69	Protein Sci 9, 387 (2000), Protein Sci 10, 2028 (2001)
1c9o	76.9	7.00	Cold Shock Protein	1.17	<i>Bacillus Caldolyticus</i>	70.0	66	Nat Struct Biol 7, 380 (2000), J Mol Biol 319, 541 (2002)
1bu7	47.0	7.40	Cytochrome p450	1.65	<i>Bacillus Megaterium</i>	30.0	455	J Biol Chem 278, 608 (2003)
1oxa	55.1	7.40	Cytochrome p450	2.10	<i>Saccaropolyspora Erythraea</i>	31.0	403	J Biol Chem 278, 608 (2003)
1akd	56.0	7.40	Cytochrome p450	1.80	<i>Pseudomonas putida</i>	30.0	405	J Biol Chem 278, 608 (2003)
1n97	88.5	7.40	Cytochrome p450	1.80	<i>Thermus thermophilus</i>	68.0	385	J Biol Chem 278, 608 (2003)
1f4t	91.0	7.40	Cytochrome p450	1.93	<i>Solfolobus Solfataricus</i>	78.0	367	J Biol Chem 278, 608 (2003)
1rgg	49.3	7.00	Ribonuclease	1.40	<i>Streptomyces aureofaciens</i>	28.0	96	Biochemistry 37, 16192 (1998), Protein Sci 8, 1843 (1999)
9rnt	50.9	7.00	Ribonuclease	1.50	<i>Aspergillus Oryzae</i>	49.0	104	J Mol Biol 279, 31790 (2003), J Mol Biol 354, 967 (2005)
1rmh	53.2	5.50	Ribonuclease	2.00	<i>Escherichia Coli</i>	37.0	155	Eur J Biochem 220, 663 (1994)
1rbn	63.6	7.10	Ribonuclease	2.10	<i>Bos Taurus</i>	38.0	123	Biochemistry 45, 10795 (2009)
2ehg	102.0	7.00	Ribonuclease	1.60	<i>Sulfolobus tokodaii</i>	80.0	149	PLoS ONE 6, e16226 (2011)