

## Supplementary Text 4

## ENSEMBLE FREQUENCY DATA (FULL LENGTH MINIMIZED CHARACTERIZED CLASS C)

[,1]	[,2]	[,3]	[,4]	[,5]	[,6]	[,7]	[,8]	[,9]
[,10]	[,11]	[,12]	[,13]	[,14]	[,15]	[,16]		
[1,]	0.000364	0.000466	0.001258	0.003716	0.005726	0.006855	0.007277	0.010009
	0.010339	0.012131	0.014230	0.015547	0.016808	0.019403	0.020951	0.021778
[2,]	0.000420	0.000575	0.001249	0.003826	0.004993	0.006780	0.007087	0.008667
	0.008990	0.011130	0.011834	0.012549	0.013127	0.015028	0.015487	0.016363
[3,]	0.000502	0.000648	0.001497	0.003840	0.005918	0.006475	0.007749	0.009656
	0.010144	0.011277	0.013026	0.015548	0.015808	0.016205	0.017694	0.021884
[4,]	0.000455	0.000712	0.002008	0.003958	0.006390	0.007638	0.008366	0.009941
	0.010514	0.011037	0.013560	0.015833	0.016429	0.019737	0.020690	0.021781
	[,17]	[,18]	[,19]	[,20]	[,21]	[,22]	[,23]	[,24]
[,25]	[,26]	[,27]	[,28]	[,29]	[,30]	[,31]	[,32]	
[1,]	0.024115	0.024604	0.026986	0.027399	0.028319	0.029132	0.029657	0.030548
	0.031502	0.032794	0.033736	0.035257	0.037578	0.037974	0.038572	0.039389
[2,]	0.017275	0.018238	0.019608	0.020642	0.021266	0.021898	0.022356	0.025342
	0.026227	0.026886	0.028069	0.028415	0.029753	0.030345	0.031908	0.032882
[3,]	0.023065	0.023982	0.026379	0.027171	0.029478	0.030001	0.030400	0.031363
	0.032585	0.033486	0.035555	0.036828	0.037360	0.038059	0.039898	0.040264
[4,]	0.022571	0.024101	0.025549	0.027434	0.027836	0.029221	0.029813	0.031510
	0.034214	0.034562	0.036801	0.037973	0.038998	0.040907	0.041307	0.042598
	[,33]	[,34]	[,35]	[,36]	[,37]	[,38]	[,39]	[,40]
[,41]	[,42]	[,43]	[,44]	[,45]	[,46]	[,47]	[,48]	
[1,]	0.040604	0.041550	0.041706	0.042929	0.043690	0.045365	0.045543	0.046779
	0.047974	0.048662	0.050003	0.050473	0.051240	0.052290	0.052749	0.053767
[2,]	0.033398	0.033989	0.035627	0.036844	0.037134	0.038145	0.038533	0.039393
	0.040940	0.041136	0.042093	0.042474	0.043677	0.044598	0.045840	0.046485
[3,]	0.041127	0.042026	0.043289	0.043634	0.044849	0.045545	0.046586	0.047360
	0.047726	0.049646	0.051021	0.051260	0.052379	0.054800	0.055239	0.056510
[4,]	0.043067	0.043276	0.045381	0.046319	0.047752	0.048544	0.049907	0.050440
	0.050724	0.052383	0.053244	0.054146	0.054875	0.055644	0.056308	0.058106
	[,49]	[,50]	[,51]	[,52]	[,53]	[,54]	[,55]	[,56]
[,57]	[,58]	[,59]	[,60]	[,61]	[,62]	[,63]	[,64]	
[1,]	0.055135	0.056275	0.056824	0.056899	0.058225	0.058723	0.059938	0.061429
	0.062209	0.063963	0.065380	0.066278	0.066757	0.068433	0.069360	0.069671
[2,]	0.047048	0.047485	0.047685	0.048278	0.049323	0.049752	0.051113	0.051530
	0.052028	0.053272	0.053824	0.054186	0.055209	0.055607	0.056100	0.057020
[3,]	0.058070	0.058735	0.059205	0.059977	0.060491	0.061682	0.062651	0.063994
	0.064556	0.065502	0.066072	0.066740	0.068699	0.069781	0.070468	0.071300
[4,]	0.058475	0.060611	0.060888	0.061030	0.061907	0.064439	0.064680	0.066550
	0.068129	0.068516	0.068944	0.069418	0.070717	0.071488	0.071838	0.074079
	[,65]	[,66]	[,67]	[,68]	[,69]	[,70]	[,71]	[,72]
[,73]	[,74]	[,75]	[,76]	[,77]	[,78]	[,79]	[,80]	
[1,]	0.071881	0.072867	0.074042	0.074847	0.076202	0.076743	0.077079	0.078404
	0.078870	0.080178	0.080719	0.081063	0.082557	0.084564	0.084771	0.085552
[2,]	0.057277	0.058663	0.059338	0.059811	0.061067	0.061597	0.062262	0.063578
	0.064842	0.065668	0.067151	0.068483	0.069400	0.070362	0.070750	0.071578
[3,]	0.071512	0.072363	0.073429	0.074202	0.075028	0.075560	0.076005	0.077229
	0.077949	0.078765	0.079959	0.081182	0.081738	0.082650	0.083822	0.084338
[4,]	0.074648	0.075138	0.076245	0.076666	0.078181	0.078993	0.079756	0.081644
	0.082212	0.083162	0.083402	0.084681	0.084766	0.085573	0.086923	0.088463
	[,81]	[,82]	[,83]	[,84]	[,85]	[,86]	[,87]	[,88]
[,89]	[,90]	[,91]	[,92]	[,93]	[,94]	[,95]	[,96]	

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[1,] 0.086915 0.087542 0.089154 0.090141 0.091899 0.092360 0.093943 0.094842  
0.096887 0.098032 0.098986 0.099790 0.100897 0.101229 0.101669 0.102867  
[2,] 0.071741 0.072880 0.073742 0.074672 0.076097 0.077754 0.078260 0.078832  
0.080755 0.082595 0.083019 0.084174 0.084348 0.084939 0.087766 0.089204  
[3,] 0.085092 0.085853 0.086721 0.088363 0.088793 0.089707 0.089991 0.091004  
0.092893 0.093778 0.094072 0.095311 0.096172 0.097141 0.098289 0.098830  
[4,] 0.089370 0.090253 0.092658 0.093838 0.094280 0.094697 0.095610 0.096896  
0.097330 0.099012 0.099340 0.100309 0.102243 0.102501 0.103225 0.104354  
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[ ,105] [ ,106] [ ,107] [ ,108] [ ,109] [ ,110] [ ,111] [ ,112]  
[1,] 0.103626 0.105057 0.105495 0.106588 0.107689 0.108684 0.108981 0.111051  
0.112122 0.112419 0.114070 0.114501 0.114693 0.115820 0.116348 0.116551  
[2,] 0.089977 0.090506 0.091156 0.092566 0.093478 0.094614 0.095001 0.095477  
0.096092 0.097753 0.099249 0.099526 0.100061 0.101121 0.102168 0.103434  
[3,] 0.099790 0.100908 0.101201 0.103032 0.103269 0.103888 0.104491 0.105535  
0.106517 0.108151 0.108290 0.108828 0.110845 0.111811 0.111938 0.112431  
[4,] 0.104711 0.105828 0.106441 0.107990 0.108356 0.108887 0.109271 0.110787  
0.111558 0.112395 0.113081 0.114002 0.115212 0.115734 0.116621 0.117877  
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[1,] 0.117695 0.119453 0.120309 0.122132 0.122244 0.123148 0.123748 0.126100  
0.126465 0.126704 0.128634 0.129771 0.130496 0.131449 0.132449 0.133293  
[2,] 0.104040 0.104827 0.105309 0.106200 0.106716 0.108852 0.109020 0.109744  
0.110681 0.111876 0.112232 0.112938 0.113559 0.114602 0.114825 0.115612  
[3,] 0.113449 0.115172 0.115746 0.116824 0.117322 0.118603 0.119855 0.120739  
0.121357 0.121713 0.123651 0.124141 0.124976 0.125883 0.126478 0.126612  
[4,] 0.118775 0.119553 0.120326 0.121251 0.122031 0.123041 0.123336 0.124710  
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[ ,137] [ ,138] [ ,139] [ ,140] [ ,141] [ ,142] [ ,143] [ ,144]  
[1,] 0.133818 0.134961 0.135992 0.136717 0.137021 0.138151 0.138745 0.140438  
0.140812 0.142111 0.142296 0.143181 0.144012 0.146069 0.146727 0.147876  
[2,] 0.116233 0.117520 0.118904 0.119945 0.120816 0.121841 0.122079 0.123020  
0.124666 0.125329 0.126680 0.127696 0.128222 0.128596 0.129419 0.131241  
[3,] 0.127823 0.128397 0.129129 0.131468 0.131980 0.133338 0.135451 0.135856  
0.136788 0.137538 0.138465 0.138802 0.140213 0.140726 0.141150 0.142446  
[4,] 0.132455 0.133316 0.134736 0.135394 0.136124 0.136454 0.137353 0.137528  
0.138564 0.140386 0.141568 0.142494 0.143110 0.145262 0.145544 0.146925  
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[ ,153] [ ,154] [ ,155] [ ,156] [ ,157] [ ,158] [ ,159] [ ,160]  
[1,] 0.149614 0.149828 0.150380 0.151346 0.152851 0.154207 0.154607 0.155658  
0.155955 0.156617 0.157496 0.158157 0.158805 0.159448 0.160828 0.161885  
[2,] 0.132389 0.133113 0.133745 0.135150 0.136246 0.136883 0.137459 0.138867  
0.139464 0.140191 0.142399 0.144110 0.144867 0.145961 0.146645 0.147551  
[3,] 0.142659 0.143551 0.145217 0.145403 0.146530 0.147604 0.148004 0.149109  
0.151656 0.152333 0.152890 0.154049 0.156325 0.156806 0.157449 0.158163  
[4,] 0.147916 0.148507 0.149227 0.150983 0.151439 0.153674 0.154208 0.155505  
0.155728 0.156870 0.158246 0.159036 0.159618 0.160521 0.161763 0.163500  
[ ,161] [ ,162] [ ,163] [ ,164] [ ,165] [ ,166] [ ,167] [ ,168]  
[ ,169] [ ,170] [ ,171] [ ,172] [ ,173] [ ,174] [ ,175] [ ,176]  
[1,] 0.163293 0.165406 0.166122 0.167141 0.168897 0.169981 0.170891 0.171781  
0.173026 0.173930 0.174691 0.174924 0.176058 0.176544 0.177580 0.180098  
[2,] 0.148467 0.148495 0.149902 0.150638 0.151408 0.151930 0.153132 0.153564  
0.154571 0.155563 0.157251 0.157652 0.158336 0.159917 0.160803 0.162046

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[3,] 0.158284 0.160099 0.161388 0.162722 0.163947 0.165044 0.165216 0.165674  
0.167151 0.167390 0.167998 0.168889 0.170326 0.172252 0.174044 0.176061  
[4,] 0.163890 0.164622 0.165226 0.166085 0.166928 0.167523 0.169110 0.169854  
0.169947 0.170887 0.171872 0.172760 0.173959 0.175587 0.176109 0.177505  
[,177] [,178] [,179] [,180] [,181] [,182] [,183] [,184]  
[,185] [,186] [,187] [,188] [,189] [,190] [,191] [,192]  
[1,] 0.182374 0.182768 0.183164 0.184774 0.185873 0.187133 0.187350 0.188912  
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[2,] 0.163003 0.163320 0.164182 0.165789 0.166491 0.168052 0.168244 0.168442  
0.168925 0.169488 0.170932 0.173370 0.173794 0.174932 0.176171 0.177016  
[3,] 0.176325 0.176730 0.177435 0.178101 0.178995 0.179194 0.179531 0.180416  
0.181428 0.182865 0.183257 0.184287 0.185616 0.185977 0.187631 0.188745  
[4,] 0.178803 0.179840 0.180535 0.182094 0.183034 0.183393 0.184644 0.186105  
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[,193] [,194] [,195] [,196] [,197] [,198] [,199] [,200]  
[,201] [,202] [,203] [,204] [,205] [,206] [,207] [,208]  
[1,] 0.200011 0.201818 0.202734 0.204074 0.204680 0.205282 0.207197 0.208629  
0.208910 0.209466 0.211315 0.213024 0.213156 0.214947 0.215871 0.216236  
[2,] 0.178142 0.179060 0.180055 0.181325 0.182320 0.183212 0.185298 0.186345  
0.187892 0.188874 0.190400 0.190835 0.191020 0.192484 0.192834 0.193296  
[3,] 0.189414 0.190273 0.191595 0.192551 0.193408 0.194086 0.194490 0.195112  
0.196197 0.197342 0.199387 0.200124 0.200859 0.202120 0.202861 0.204370  
[4,] 0.194132 0.194720 0.195993 0.197010 0.197662 0.198661 0.198820 0.200297  
0.201533 0.202741 0.203560 0.205088 0.205573 0.206781 0.207568 0.208026  
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[1,] 0.218746 0.219551 0.220627 0.221423 0.223487 0.225119 0.225309 0.226064  
0.226559 0.228012 0.228237 0.229960 0.230912 0.231317 0.232061 0.232885  
[2,] 0.195011 0.196608 0.197676 0.198038 0.200219 0.200877 0.201382 0.201661  
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[3,] 0.205635 0.205909 0.207198 0.207541 0.209506 0.210556 0.211161 0.211344  
0.212745 0.214152 0.214992 0.216751 0.216914 0.217963 0.218326 0.219031  
[4,] 0.208705 0.209979 0.211445 0.212482 0.213862 0.214714 0.215267 0.216952  
0.218930 0.219701 0.220724 0.220922 0.221564 0.222430 0.223575 0.224039  
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[,233] [,234] [,235] [,236] [,237] [,238] [,239] [,240]  
[1,] 0.233029 0.234423 0.236139 0.237529 0.238037 0.239359 0.239845 0.241391  
0.242192 0.242825 0.243771 0.246664 0.248684 0.249617 0.249774 0.251765  
[2,] 0.209353 0.210503 0.212331 0.213776 0.214452 0.215150 0.215921 0.217267  
0.218265 0.219212 0.220181 0.221595 0.222745 0.223258 0.224019 0.224724  
[3,] 0.220356 0.221338 0.222570 0.223530 0.224332 0.224423 0.225062 0.225440  
0.226581 0.228143 0.228974 0.229702 0.230155 0.232147 0.233511 0.233605  
[4,] 0.225407 0.225564 0.226611 0.228011 0.228606 0.229217 0.232403 0.233592  
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[,241] [,242] [,243] [,244] [,245] [,246] [,247] [,248]  
[,249] [,250] [,251] [,252] [,253] [,254] [,255] [,256]  
[1,] 0.252200 0.252861 0.254592 0.254954 0.256968 0.259177 0.259255 0.260739  
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[2,] 0.225533 0.226011 0.226306 0.227878 0.229104 0.229999 0.230588 0.232549  
0.233507 0.235353 0.236082 0.237937 0.238744 0.239763 0.240221 0.240649  
[3,] 0.234321 0.236753 0.237060 0.237763 0.238577 0.239671 0.241657 0.242927  
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[4,] 0.241852 0.242819 0.243937 0.244529 0.245282 0.245705 0.247054 0.247987  
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[,257] [,258] [,259] [,260] [,261] [,262] [,263] [,264]  
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[2,] 0.241777 0.243825 0.245208 0.245931 0.247462 0.249345 0.250062 0.250869  
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0.259400 0.260776 0.261287 0.262009 0.263775 0.265376 0.267419 0.268547  
[4,] 0.257358 0.257818 0.259341 0.260046 0.262188 0.263306 0.263811 0.264870  
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0.301246 0.303193 0.304353 0.305042 0.305409 0.305801 0.308980 0.309961  
[2,] 0.259717 0.260881 0.261724 0.262035 0.263175 0.264512 0.266893 0.267292  
0.268583 0.270338 0.271536 0.273046 0.273644 0.274135 0.275511 0.276612  
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[1,] 0.311671 0.312742 0.313015 0.314124 0.315583 0.315751 0.316395 0.318233  
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[2,] 0.277105 0.278602 0.280449 0.281064 0.281479 0.283564 0.285095 0.285860  
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[3,] 0.287571 0.288386 0.289005 0.290054 0.291310 0.292936 0.293413 0.294360  
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[4,] 0.292537 0.293951 0.295169 0.296415 0.297054 0.298349 0.300367 0.300881  
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Supplementary Text 4

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Supplementary Text 4

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Supplementary Text 4

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Supplementary Text 4

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Supplementary Text 4

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Supplementary Text 4

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Supplementary Text 4

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Supplementary Text 4

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Supplementary Text 4

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Supplementary Text 4

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Supplementary Text 4

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Supplementary Text 4

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Supplementary Text 4

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Supplementary Text 4

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32.36092 32.61528 32.68368 33.28449 33.49680 33.65115 33.83872 34.75047  
[2,] 31.18554 31.33011 31.38138 31.42144 31.44826 31.52339 31.53392 31.90210  
31.96240 32.14362 32.88480 33.00581 33.02078 33.16324 33.18044 33.57804  
[3,] 30.20241 30.34424 30.93285 31.08813 31.09439 31.56253 31.79440 31.83950  
32.31723 32.43049 32.52697 32.58913 32.61509 32.74731 32.93778 33.03155  
[4,] 30.69919 30.71828 30.80065 31.10567 31.71450 31.73416 31.74090 32.38628  
32.57337 32.62469 32.84147 33.44829 33.49442 33.49458 33.79547 34.17114  
[,1617] [,1618] [,1619] [,1620] [,1621] [,1622] [,1623] [,1624]  
[,1625] [,1626] [,1627] [,1628] [,1629] [,1630] [,1631] [,1632]  
[1,] 34.78396 35.27187 35.82951 35.84268 36.18872 36.69250 36.86700 37.06049  
37.08756 37.16773 37.32320 37.36670 37.65296 37.72624 37.99955 38.11475  
[2,] 34.09323 34.33632 34.52777 34.81119 34.84858 34.90965 35.40747 35.80302  
35.89897 35.95408 36.32079 36.85616 37.64426 37.94378 38.46757 38.66559  
[3,] 33.71985 33.93314 33.94114 34.14912 34.67247 35.06287 35.62537 35.72747  
36.27121 36.58984 36.68500 36.93084 37.23443 38.28827 38.78507 39.15980  
[4,] 34.18019 34.48680 34.94913 35.02950 35.10225 35.21012 35.39019 35.40161  
35.63056 35.84048 35.93979 36.09992 36.31262 36.83247 37.30965 38.24818  
[,1633] [,1634] [,1635] [,1636] [,1637] [,1638] [,1639] [,1640]  
[,1641]  
[1,] 39.95018 40.17559 40.53910 42.62173 42.83818 43.17693 44.69009 46.56155  
46.68403

Supplementary Text 4

[2,] 39.11469 39.40311 40.50702 40.97838 41.64801 44.67057 44.95737 45.30978  
 45.52053  
 [3,] 39.32811 41.43319 41.48425 44.03696 44.67561 44.84295 46.62989 47.45336  
 52.26427  
 [4,] 38.57350 39.62850 42.31144 42.44367 42.83738 45.86228 46.68057 47.83299  
 53.95470

ENSEMBLE FLUCTUATION DATA (FULL LENGTH MINIMIZED CHARACTERIZED CLASS C)

	[,1]	[,2]	[,3]	[,4]	[,5]
[,6]	[,7]	[,8]	[,9]	[,10]	[,11]
full_length_NAT0_min3_2.pdb	0.3196883	0.2232239	0.1545854	0.1561112	0.1787880
0.1479947	0.1307400	0.1539423	0.1415609	0.1128160	0.1420726
0.1656465					
full_length_LJP6_min3_2.pdb	0.3571856	0.2375279	0.1583190	0.1545050	0.1818254
0.1520698	0.1344166	0.1570454	0.1463246	0.1139684	0.1503097
0.1645586					
full_length_3WY9_min3_2.pdb	0.3481567	0.2559911	0.1815551	0.1497023	0.1690659
0.1471666	0.1340629	0.1514703	0.1311907	0.1065059	0.1378035
0.1508002					
full_length_ZSP9_min3_2.pdb	0.3173784	0.2308521	0.1519285	0.1465663	0.1643808
0.1358226	0.1209944	0.1373037	0.1248568	0.1012153	0.1308126
0.1492657					
	[,13]	[,14]	[,15]	[,16]	[,17]
[,18]	[,19]	[,20]	[,21]	[,22]	[,23]
full_length_NAT0_min3_2.pdb	0.1468837	0.1441886	0.1853621	0.2001398	0.1754705
0.1934311	0.2005835	0.2236689	0.3260988	0.3840125	0.4992762
0.8606003					
full_length_LJP6_min3_2.pdb	0.1466754	0.1420203	0.1682390	0.1808545	0.1671676
0.1871562	0.1845880	0.2056680	0.2952795	0.3517449	0.6223474
0.8378657					
full_length_3WY9_min3_2.pdb	0.1363147	0.1333722	0.1634204	0.1762523	0.1573457
0.1725799	0.1691923	0.1893345	0.2732467	0.3311142	0.4297773
0.7259664					
full_length_ZSP9_min3_2.pdb	0.1351241	0.1354901	0.1738703	0.1810634	0.1584898
0.1729080	0.1693952	0.1912764	0.2745783	0.3255493	0.4252642
0.7583563					
	[,25]	[,26]	[,27]	[,28]	[,29]
[,30]	[,31]	[,32]	[,33]	[,34]	[,35]
full_length_NAT0_min3_2.pdb	0.6993454	0.4713915	0.4338513	0.3395530	0.3956608
0.3505418	0.3492005	0.3905368	0.3290432	0.2794946	0.2656402
0.3193043					
full_length_LJP6_min3_2.pdb	0.7120482	0.4092856	0.3469848	0.2858257	0.3544627
0.3048290	0.2970382	0.3305780	0.2885586	0.2461263	0.2513429
0.3042105					
full_length_3WY9_min3_2.pdb	0.6669924	0.4196245	0.3455474	0.2733379	0.3165930
0.3013039	0.2986600	0.3310508	0.2842775	0.2331438	0.2352446
0.2808779					
full_length_ZSP9_min3_2.pdb	0.6621184	0.4236385	0.3693460	0.3037867	0.3195784
0.2793174	0.3012740	0.3327706	0.2799590	0.2353484	0.2376726
0.2892603					
	[,37]	[,38]	[,39]	[,40]	[,41]
[,42]	[,43]	[,44]	[,45]	[,46]	[,47]
full_length_NAT0_min3_2.pdb	0.3556406	0.2481690	0.2477753	0.3655055	0.4366645
0.4359033	0.4515755	0.3655805	0.3303875	0.2226349	0.2459569
0.2025737					
full_length_LJP6_min3_2.pdb	0.3526383	0.2405269	0.2476133	0.3641436	0.4083933
0.4130006	0.4692369	0.3977740	0.3326215	0.2251198	0.2448243
0.1922890					
full_length_3WY9_min3_2.pdb	0.3375881	0.2252787	0.2210604	0.3211285	0.3555462
0.3596943	0.3919072	0.3291919	0.2992048	0.2020295	0.2230669
0.1822818					
full_length_ZSP9_min3_2.pdb	0.3364455	0.2290780	0.2287595	0.3356412	0.3974273
0.3915119	0.4014096	0.3356316	0.3100502	0.2074522	0.2266238
0.1830055					
	[,49]	[,50]	[,51]	[,52]	[,53]
[,54]	[,55]	[,56]	[,57]	[,58]	[,59]
full_length_NAT0_min3_2.pdb	0.1616169	0.1465335	0.1508275	0.1389680	0.1786573
0.2065200	0.2180453	0.2032642	0.1887584	0.1502672	0.1405319
0.1226331					

Supplementary Text 4

full\_length\_LJP6\_min3\_2.pdb 0.1600677 0.1434811 0.1394187 0.1367476 0.1750194  
 0.2015058 0.2111719 0.1891475 0.1846376 0.1479320 0.1391913 0.1283807  
 full\_length\_3WY9\_min3\_2.pdb 0.1485762 0.1314739 0.1367631 0.1287425 0.1823465  
 0.1985815 0.1985027 0.1822218 0.1653304 0.1353288 0.1245898 0.1143613  
 full\_length\_ZSP9\_min3\_2.pdb 0.1469989 0.1316041 0.1350062 0.1258677 0.1703367  
 0.1996043 0.1956918 0.1781692 0.1666738 0.1369491 0.1257081 0.1162998  
 [,61] [,62] [,63] [,64]  
 [,65] [,66] [,67] [,68] [,69] [,70] [,71]  
 full\_length\_NAT0\_min3\_2.pdb 0.10008939 0.08762135 0.08840737 0.07828815  
 0.07668575 0.07762335 0.07890102 0.07166728 0.07218994 0.08890492 0.09253132  
 full\_length\_LJP6\_min3\_2.pdb 0.10206264 0.09937556 0.09497032 0.08286848  
 0.07871699 0.07893929 0.08090042 0.06975773 0.07592788 0.08700427 0.09116539  
 full\_length\_3WY9\_min3\_2.pdb 0.09476385 0.08617302 0.08584639 0.07673886  
 0.07657040 0.07598235 0.07877535 0.06940872 0.07150234 0.08508582 0.08721158  
 full\_length\_ZSP9\_min3\_2.pdb 0.09399595 0.08499766 0.08502086 0.07713667  
 0.07618207 0.07569626 0.07672307 0.06834513 0.07052531 0.08417388 0.08531236  
 [,72] [,73] [,74] [,75] [,76]  
 [,77] [,78] [,79] [,80] [,81] [,82] [,83]  
 full\_length\_NAT0\_min3\_2.pdb 0.10003419 0.1090555 0.1284989 0.1537887 0.1745473  
 0.1646314 0.1816855 0.2270194 0.1834902 0.1706271 0.2286842 0.2665217  
 full\_length\_LJP6\_min3\_2.pdb 0.09910786 0.1063162 0.1218680 0.1496173 0.1721420  
 0.1532628 0.1659223 0.2104270 0.1638032 0.1628122 0.2190658 0.2373030  
 full\_length\_3WY9\_min3\_2.pdb 0.09665789 0.1027889 0.1185584 0.1444783 0.1658230  
 0.1601808 0.1648085 0.2029895 0.1850676 0.1603727 0.2111310 0.2639838  
 full\_length\_ZSP9\_min3\_2.pdb 0.09565777 0.1018089 0.1132475 0.1369165 0.1743836  
 0.1536273 0.1539782 0.1960381 0.1652570 0.1477665 0.1932746 0.2339648  
 [,84] [,85] [,86] [,87] [,88]  
 [,89] [,90] [,91] [,92] [,93] [,94] [,95]  
 full\_length\_NAT0\_min3\_2.pdb 0.2378051 0.2604722 0.2335851 0.2043446 0.2350950  
 0.2028793 0.1542886 0.1663535 0.1893671 0.1524530 0.1284861 0.1479045  
 full\_length\_LJP6\_min3\_2.pdb 0.2120601 0.2259742 0.2072419 0.1898935 0.2489077  
 0.2071545 0.1601107 0.1740243 0.1895226 0.1614289 0.1410228 0.1569521  
 full\_length\_3WY9\_min3\_2.pdb 0.2330191 0.2390187 0.2037850 0.1816519 0.2197927  
 0.1882351 0.1481129 0.1578840 0.1771465 0.1472548 0.1241084 0.1384713  
 full\_length\_ZSP9\_min3\_2.pdb 0.2217295 0.2274805 0.1928023 0.1664972 0.2074993  
 0.1804025 0.1388652 0.1469815 0.1692455 0.1417007 0.1206408 0.1361090  
 [,96] [,97] [,98] [,99] [,100]  
 [,101] [,102] [,103] [,104] [,105] [,106] [,107]  
 full\_length\_NAT0\_min3\_2.pdb 0.1613675 0.1246133 0.1276144 0.1679361 0.1550204  
 0.1398281 0.1757814 0.1877944 0.1763517 0.1961819 0.3863130 0.3994325  
 full\_length\_LJP6\_min3\_2.pdb 0.1698018 0.1337036 0.1389379 0.1835908 0.1594692  
 0.1505690 0.1832040 0.1912371 0.1783362 0.1891400 0.3536686 0.3056758  
 full\_length\_3WY9\_min3\_2.pdb 0.1514048 0.1175416 0.1217324 0.1594293 0.1434923  
 0.1324246 0.1631771 0.1703447 0.1647122 0.1852500 0.3661232 0.3940274  
 full\_length\_ZSP9\_min3\_2.pdb 0.1488365 0.1167993 0.1227629 0.1586679 0.1445989  
 0.1344562 0.1670381 0.1735122 0.1681582 0.1888724 0.3645007 0.4699058  
 [,108] [,109] [,110] [,111] [,112]  
 [,113] [,114] [,115] [,116] [,117] [,118] [,119]  
 full\_length\_NAT0\_min3\_2.pdb 0.3454319 0.2609574 0.2323626 0.1736243 0.1752331  
 0.1647375 0.1767861 0.1873204 0.2268780 0.2761920 0.2519213 0.3475499  
 full\_length\_LJP6\_min3\_2.pdb 0.2601560 0.2224007 0.2113690 0.1654635 0.1625904  
 0.1572997 0.1626359 0.1785612 0.2130848 0.2517954 0.2568468 0.3346860  
 full\_length\_3WY9\_min3\_2.pdb 0.3179675 0.2534538 0.2232601 0.1595074 0.1561986  
 0.1506377 0.1550040 0.1685244 0.2014984 0.2382031 0.2396591 0.3062926

Supplementary Text 4

full\_length\_ZSP9\_min3\_2.pdb 0.3406083 0.2550940 0.2257503 0.1649842 0.1602997  
 0.1539685 0.1567050 0.1723242 0.2039922 0.2439571 0.2444846 0.3001813  
 [,120] [,121] [,122] [,123] [,124]  
 [,125] [,126] [,127] [,128] [,129] [,130] [,131]  
 full\_length\_NAT0\_min3\_2.pdb 0.3296586 0.2688816 0.2943371 0.3835587 0.3605248  
 0.2858334 0.2876476 0.2848095 0.2779504 0.3192896 0.3386772 0.3693850  
 full\_length\_LJP6\_min3\_2.pdb 0.3316055 0.2585317 0.2719698 0.3692452 0.3314841  
 0.2738849 0.2717322 0.2512421 0.2509220 0.2712574 0.2930777 0.3312446  
 full\_length\_3WY9\_min3\_2.pdb 0.2984437 0.2411717 0.2676186 0.3595661 0.3480983  
 0.2708830 0.2598456 0.2449289 0.2468975 0.2732237 0.3189743 0.3646283  
 full\_length\_ZSP9\_min3\_2.pdb 0.3006035 0.2369477 0.2540461 0.3418798 0.3137615  
 0.2513104 0.2500119 0.2350519 0.2364522 0.2762180 0.2873823 0.3305879  
 [,132] [,133] [,134] [,135] [,136]  
 [,137] [,138] [,139] [,140] [,141] [,142] [,143]  
 full\_length\_NAT0\_min3\_2.pdb 0.5365120 0.4342103 0.4417758 0.3005118 0.2968430  
 0.2318007 0.2253858 0.2130404 0.2074657 0.2565186 0.3194285 0.4596938  
 full\_length\_LJP6\_min3\_2.pdb 0.4998995 0.4202946 0.5006126 0.2973789 0.2767567  
 0.2197573 0.2003761 0.1870158 0.1868150 0.2180212 0.2767060 0.4569681  
 full\_length\_3WY9\_min3\_2.pdb 0.5650614 0.4068225 0.4306841 0.2754609 0.2622780  
 0.2043561 0.1948757 0.1871036 0.1841208 0.2410577 0.3054881 0.4471092  
 full\_length\_ZSP9\_min3\_2.pdb 0.5360737 0.4022353 0.4481232 0.2763177 0.2698092  
 0.2114109 0.2051898 0.2002165 0.1909468 0.2485114 0.3166520 0.4421914  
 [,144] [,145] [,146] [,147] [,148]  
 [,149] [,150] [,151] [,152] [,153] [,154] [,155]  
 full\_length\_NAT0\_min3\_2.pdb 0.2434871 0.1952443 0.1418791 0.1121879 0.09977407  
 0.09637321 0.09294732 0.07728541 0.07197192 0.08280979 0.08341047 0.07067412  
 full\_length\_LJP6\_min3\_2.pdb 0.2688042 0.1772320 0.1299703 0.1096802 0.09480796  
 0.09398721 0.09008488 0.07574676 0.07305077 0.08407578 0.08381655 0.07156825  
 full\_length\_3WY9\_min3\_2.pdb 0.2224096 0.1774204 0.1365966 0.1098087 0.09349746  
 0.09262989 0.08936759 0.07383564 0.07122935 0.08335552 0.08135068 0.06882460  
 full\_length\_ZSP9\_min3\_2.pdb 0.2340860 0.1834637 0.1374051 0.1161181 0.09723754  
 0.09563267 0.09329681 0.07678869 0.07208001 0.08403600 0.08253856 0.06872620  
 [,156] [,157] [,158] [,159]  
 [,160] [,161] [,162] [,163] [,164] [,165] [,166] [,167]  
 full\_length\_NAT0\_min3\_2.pdb 0.06861091 0.08757696 0.08597975 0.09019373  
 0.1064090 0.1230109 0.1489518 0.1766416 0.1949334 0.2337121 0.4179950 0.4652846  
 full\_length\_LJP6\_min3\_2.pdb 0.06881692 0.08981210 0.08915911 0.08819829  
 0.1055561 0.1262479 0.1525866 0.1646772 0.1942502 0.2387112 0.4544579 0.4541354  
 full\_length\_3WY9\_min3\_2.pdb 0.06717630 0.08524517 0.08404811 0.08599619  
 0.1024609 0.1173650 0.1428997 0.1643837 0.1776778 0.2274040 0.4010092 0.4138021  
 full\_length\_ZSP9\_min3\_2.pdb 0.06738536 0.08656654 0.08457569 0.08374694  
 0.1003444 0.1174854 0.1406880 0.1566831 0.1747754 0.2167255 0.4103178 0.4211202  
 [,168] [,169] [,170] [,171] [,172]  
 [,173] [,174] [,175] [,176] [,177] [,178] [,179]  
 full\_length\_NAT0\_min3\_2.pdb 0.3823836 0.3098074 0.3650247 0.2768742 0.1873769  
 0.2262145 0.2235673 0.1463380 0.1482533 0.2021974 0.1668029 0.1214262  
 full\_length\_LJP6\_min3\_2.pdb 0.3894454 0.3310796 0.3782941 0.2880926 0.1920419  
 0.2443459 0.2323802 0.1496085 0.1501455 0.1972697 0.1655308 0.1203039  
 full\_length\_3WY9\_min3\_2.pdb 0.3515268 0.2885648 0.3483479 0.2647482 0.1809137  
 0.2192568 0.2212300 0.1451896 0.1446563 0.2051002 0.1683046 0.1226216  
 full\_length\_ZSP9\_min3\_2.pdb 0.3388700 0.2948298 0.3490219 0.2615722 0.1799238  
 0.2083950 0.2277627 0.1487052 0.1449087 0.2025665 0.1702642 0.1241679  
 [,180] [,181] [,182] [,183] [,184]  
 [,185] [,186] [,187] [,188] [,189] [,190] [,191]

Supplementary Text 4

full\_length\_NAT0\_min3\_2.pdb 0.1613385 0.1686201 0.1241703 0.1278884 0.1855128  
 0.1692012 0.1310254 0.1919351 0.2535562 0.2495806 0.2183766 0.2194902  
 full\_length\_LJP6\_min3\_2.pdb 0.1549673 0.1625702 0.1209949 0.1232709 0.1723888  
 0.1546452 0.1232095 0.1876444 0.2321808 0.2185696 0.2175892 0.1931683  
 full\_length\_3WY9\_min3\_2.pdb 0.1554896 0.1648571 0.1219626 0.1227076 0.1746150  
 0.1623066 0.1286877 0.1803350 0.2578450 0.2505629 0.1991026 0.2197051  
 full\_length\_ZSP9\_min3\_2.pdb 0.1609376 0.1730492 0.1273400 0.1279283 0.1798727  
 0.1679570 0.1319670 0.1915247 0.2568105 0.2544830 0.2047017 0.2194046  
 [,192] [,193] [,194] [,195] [,196]  
 [,197] [,198] [,199] [,200] [,201] [,202] [,203]  
 full\_length\_NAT0\_min3\_2.pdb 0.1866673 0.2898891 0.2449882 0.2280059 0.3140019  
 0.2985051 0.2692667 0.2981483 0.3748672 0.3671069 0.5177073 0.4062048  
 full\_length\_LJP6\_min3\_2.pdb 0.1584260 0.1539385 0.1692688 0.2555603 0.2338326  
 0.2379171 0.2847308 0.2346199 0.1600115 0.1982907 0.2595587 0.2218552  
 full\_length\_3WY9\_min3\_2.pdb 0.1890023 0.3004550 0.2282653 0.1953788 0.2654711  
 0.2468130 0.2010208 0.2189422 0.3741722 0.7372896 0.3784034 0.2449740  
 full\_length\_ZSP9\_min3\_2.pdb 0.1823256 0.2742170 0.2288988 0.1976182 0.2489923  
 0.2488763 0.1980770 0.2150917 0.3595893 0.5482589 0.3415142 0.2387206  
 [,204] [,205] [,206] [,207] [,208]  
 [,209] [,210] [,211] [,212] [,213] [,214] [,215]  
 full\_length\_NAT0\_min3\_2.pdb 0.5324502 1.2196275 0.6557838 0.2731366 0.1765072  
 0.1217177 0.1439180 0.1137319 0.08755393 0.1042233 0.1117117 0.09003226  
 full\_length\_LJP6\_min3\_2.pdb 0.1971927 0.1879839 0.2771696 0.1890907 0.1679328  
 0.1419249 0.1486731 0.1099980 0.09124985 0.1181058 0.1147320 0.09587453  
 full\_length\_3WY9\_min3\_2.pdb 0.2168315 0.2418716 0.2453572 0.2588817 0.1552630  
 0.1219351 0.1361838 0.1022757 0.08490684 0.1037010 0.1029952 0.08532272  
 full\_length\_ZSP9\_min3\_2.pdb 0.2111103 0.2317161 0.2103421 0.2301465 0.1501846  
 0.1255726 0.1355395 0.1008240 0.08602133 0.1151304 0.1041380 0.08427442  
 [,216] [,217] [,218] [,219] [,220]  
 [,221] [,222] [,223] [,224] [,225] [,226] [,227]  
 full\_length\_NAT0\_min3\_2.pdb 0.08221563 0.1135033 0.1200940 0.10637324 0.1245592  
 0.1605191 0.1827010 0.1747440 0.2619650 0.3294792 0.3605301 0.3542147  
 full\_length\_LJP6\_min3\_2.pdb 0.08496510 0.1144763 0.1171977 0.10398461 0.1210511  
 0.1496623 0.1732651 0.1773387 0.2472985 0.2968717 0.3350471 0.3369360  
 full\_length\_3WY9\_min3\_2.pdb 0.07844964 0.1058930 0.1133051 0.10255013 0.1176050  
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 full\_length\_ZSP9\_min3\_2.pdb 0.07824628 0.1053350 0.1077170 0.09674758 0.1167827  
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 0.1765977 0.2563741 0.2993337 0.2563249 0.3002670 0.4593023 0.4723820  
 full\_length\_LJP6\_min3\_2.pdb 0.3207277 0.1952504 0.2093143 0.2704191 0.2403830  
 0.1839404 0.2551470 0.3048373 0.2232343 0.2493905 0.3675359 0.3153598  
 full\_length\_3WY9\_min3\_2.pdb 0.3219024 0.1818950 0.2083776 0.2612864 0.2054655  
 0.1659958 0.2390230 0.2724812 0.2229895 0.2471556 0.3686815 0.3139440  
 full\_length\_ZSP9\_min3\_2.pdb 0.3140090 0.1862862 0.2016315 0.2587164 0.2170695  
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Supplementary Text 4

full\_length\_3WY9\_min3\_2.pdb 0.2869361 0.3970212 0.4532171 0.5698855 0.5743212  
 0.2890708 0.3153485 0.2578360 0.2180856 0.1287890 0.10683224 0.1487535  
 full\_length\_ZSP9\_min3\_2.pdb 0.2825840 0.3548302 0.4567147 0.5667292 0.5615838  
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 full\_length\_NAT0\_min3\_2.pdb 0.1476506 0.1640734 0.1343415 0.1029649 0.1235516  
 0.1195623 0.1122042 0.1182411 0.1342413 0.1364007 0.1508958 0.1728415  
 full\_length\_LJP6\_min3\_2.pdb 0.1829138 0.1772459 0.1185531 0.1163591 0.1225878  
 0.1270772 0.1260202 0.1236475 0.1342695 0.1368968 0.1478027 0.1770050  
 full\_length\_3WY9\_min3\_2.pdb 0.1538580 0.1656143 0.1270510 0.1128041 0.1195777  
 0.1175910 0.1096504 0.1097301 0.1201842 0.1263109 0.1474149 0.1628836  
 full\_length\_ZSP9\_min3\_2.pdb 0.1470890 0.1487556 0.1263044 0.1077575 0.1180836  
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 full\_length\_LJP6\_min3\_2.pdb 0.1996284 0.2113933 0.2351902 0.2843113 0.4239725  
 0.5226386 0.4485517 0.4439024 0.7824616 1.0940147 0.6878617 0.7150412  
 full\_length\_3WY9\_min3\_2.pdb 0.1730064 0.2420182 0.3064377 0.3783683 0.3880348  
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 full\_length\_3WY9\_min3\_2.pdb 0.4425266 0.3655690 0.2542011 0.2824706 0.3699680  
 0.2942341 0.1908303 0.1975243 0.2604497 0.2167220 0.1633129 0.1966876  
 full\_length\_ZSP9\_min3\_2.pdb 0.8314671 0.4512584 0.2949528 0.2417765 0.3327327  
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 full\_length\_ZSP9\_min3\_2.pdb 0.2165520 0.1759960 0.1627489 0.1995395 0.1906125  
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 0.3493401 0.3410967 0.2595173 0.2040906 0.1754986 0.1818308 0.2125164  
 full\_length\_LJP6\_min3\_2.pdb 0.3291583 0.2844972 0.2464757 0.2493883 0.2607761  
 0.3846175 0.3070715 0.2522175 0.2112331 0.1847412 0.2139460 0.2703803  
 full\_length\_3WY9\_min3\_2.pdb 0.2504978 0.2241606 0.2311749 0.2265967 0.2204957  
 0.3367734 0.3181753 0.2566895 0.1999186 0.1718267 0.1752378 0.1878163  
 full\_length\_ZSP9\_min3\_2.pdb 0.2386916 0.2123109 0.2172055 0.2063991 0.2166531  
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Supplementary Text 4

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full_length_NAT0_min3_2.pdb	0.2414486	0.2283307	0.1682893	0.1173220	0.1174488				
0.10175734	0.09268723	0.09401411	0.09792324	0.07618005	0.07542024	0.09429517			
full_length_LJP6_min3_2.pdb	0.2787958	0.2234321	0.1759360	0.1225008	0.1272809				
0.10838595	0.10294133	0.09989265	0.09979649	0.08078950	0.08226748	0.09996246			
full_length_3WY9_min3_2.pdb	0.2364674	0.2208098	0.1761308	0.1166271	0.1175748				
0.09948961	0.09191895	0.08571864	0.09084718	0.07600825	0.06973039	0.08720780			
full_length_ZSP9_min3_2.pdb	0.2286588	0.2265034	0.1595759	0.1100743	0.1127273				
0.09994155	0.09149876	0.09455725	0.09078184	0.07442813	0.07095279	0.08518972			
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full_length_NAT0_min3_2.pdb	0.09358183	0.08562380	0.10264704	0.1169391	0.1195472				
0.1469750	0.1619687	0.1864932	0.2766296	0.2720494	0.4233353	0.4044409			
full_length_LJP6_min3_2.pdb	0.09518286	0.08838814	0.09803826	0.1104623	0.1178582				
0.1421808	0.1454830	0.1652985	0.2436093	0.2634219	0.3001857	0.6647977			
full_length_3WY9_min3_2.pdb	0.08640634	0.07796134	0.09320773	0.1018613	0.1050095				
0.1320294	0.1452098	0.1773607	0.2716352	0.2934010	0.3967891	0.3326480			
full_length_ZSP9_min3_2.pdb	0.08409375	0.07554672	0.09198760	0.1005182	0.1010903				
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full_length_NAT0_min3_2.pdb	0.2919457	0.3143556	0.3958034	0.6754753	0.7617202				
1.1718183	1.6571198	2.5306997	2.1758173	0.4637586	0.4770311	0.2849911			
full_length_LJP6_min3_2.pdb	0.6894427	0.5050267	0.6517782	0.9979131	1.1899075				
1.0769221	0.9674503	0.6744161	0.7151862	0.5326054	0.3617873	0.2698526			
full_length_3WY9_min3_2.pdb	0.3774864	0.6995759	0.8593886	0.7744411	0.7706800				
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full_length_ZSP9_min3_2.pdb	0.3218516	0.5855571	0.5550949	0.8467519	0.9141060				
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full_length_NAT0_min3_2.pdb	0.2334017	0.2731438	0.2423602	0.1668180	0.1729708				
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full_length_LJP6_min3_2.pdb	0.2208872	0.2359922	0.2137513	0.1506865	0.1589591				
0.1986176	0.1638017	0.1258277	0.1457753	0.1562051	0.1351065	0.1330977			
full_length_3WY9_min3_2.pdb	0.2183242	0.2649382	0.2194584	0.1505455	0.1614980				
0.1885072	0.1479185	0.1194406	0.1419927	0.1581543	0.1409274	0.1374248			
full_length_ZSP9_min3_2.pdb	0.2023418	0.2434137	0.2113994	0.1427161	0.1502656				
0.1834325	0.1464615	0.1135791	0.1351346	0.1538369	0.1330103	0.1284159			
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full_length_NAT0_min3_2.pdb	0.1567080	0.1533256	0.1525568	0.1607723	0.2003611				
0.2407954	0.2889836	0.3974003	0.4916526	0.3409232	0.2280434	0.1698976			
full_length_LJP6_min3_2.pdb	0.1496280	0.1469089	0.1475769	0.1470772	0.1729550				
0.2048724	0.2674560	0.3517166	0.3707064	0.2680658	0.2294958	0.1560522			
full_length_3WY9_min3_2.pdb	0.1569837	0.1517114	0.1508115	0.1516627	0.1787329				
0.2241454	0.2714470	0.4280722	0.5247509	0.3394221	0.2237061	0.1589920			
full_length_ZSP9_min3_2.pdb	0.1436861	0.1475704	0.1435521	0.1463127	0.1826573				
0.2251255	0.2712883	0.4258260	0.5057400	0.3294837	0.2159857	0.1566501			
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full_length_NAT0_min3_2.pdb	0.1450885	0.1416329	0.1722536	0.2259433	0.2190511				
0.2842111	0.3586944	0.2910577	0.2070482	0.2262944	0.3051769	0.2348114			

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full\_length\_LJP6\_min3\_2.pdb 0.1484424 0.1381706 0.1607516 0.2063200 0.2044452  
 0.2360227 0.2892570 0.3032601 0.2115752 0.2366411 0.2856864 0.2360280  
 full\_length\_3WY9\_min3\_2.pdb 0.1429081 0.1371921 0.1611263 0.2077111 0.2097937  
 0.2425633 0.3034839 0.2989956 0.1963395 0.2275755 0.3054255 0.2306504  
 full\_length\_ZSP9\_min3\_2.pdb 0.1384039 0.1332355 0.1541072 0.1976879 0.2004013  
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 full\_length\_NAT0\_min3\_2.pdb 0.1921964 0.1864954 0.2000791 0.2296918 0.2472939  
 0.2458650 0.2525678 0.2923279 0.3118989 0.3416197 0.3724065 0.3403229  
 full\_length\_LJP6\_min3\_2.pdb 0.2020802 0.1859861 0.1996147 0.2225206 0.2322167  
 0.2361137 0.2460875 0.2743932 0.3252386 0.3271875 0.3486249 0.3334171  
 full\_length\_3WY9\_min3\_2.pdb 0.1903859 0.1810137 0.1982929 0.2184759 0.2211964  
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 full\_length\_ZSP9\_min3\_2.pdb 0.1818779 0.1705150 0.1898191 0.2085239 0.2145682  
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 full\_length\_LJP6\_min3\_2.pdb 0.3790464 0.3932192 0.4478589 0.4201777 0.4235698  
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 full\_length\_ZSP9\_min3\_2.pdb 0.3565085 0.3630832 0.4257734 0.4086308 0.4260231  
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 full\_length\_LJP6\_min3\_2.pdb 0.1729230 0.1262948 0.1312156 0.1102780 0.1196256  
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full\_length\_ZSP9\_min3\_2.pdb 0.1322896 0.1208733 0.1379329 0.1073343 0.08644267  
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 full\_length\_NAT0\_min3\_2.pdb 0.08946350 0.10356883 0.1216836 0.1390408 0.1499716  
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 full\_length\_LJP6\_min3\_2.pdb 0.08644216 0.09776621 0.1123607 0.1325951 0.1436794  
 0.1506023 0.2010362 0.2735335 0.2755034 0.2547911 0.2302414 0.6110722  
 full\_length\_3WY9\_min3\_2.pdb 0.09118232 0.13017198 0.1402256 0.1685965 0.2617823  
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 full\_length\_ZSP9\_min3\_2.pdb 0.07940523 0.09498944 0.1081161 0.1229663 0.1371127  
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 3.451972 2.048884 1.4196337 1.1110480 0.8217429 0.8085582 0.5278862 0.5607573  
 full\_length\_3WY9\_min3\_2.pdb 1.3867636 2.3163870 2.914814 2.262081 2.527977  
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Supplementary Text 4

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ENSEMBLE FREQUENCY DATA (TRUNCATED MINIMIZED CHARACTERIZED CLASS C)

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Supplementary Text 4

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Supplementary Text 4

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Supplementary Text 4

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Supplementary Text 4

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Supplementary Text 4

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Supplementary Text 4

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Supplementary Text 4

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Supplementary Text 4

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Supplementary Text 4

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Supplementary Text 4

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Supplementary Text 4

23.53778 23.57635 23.60678 23.62069 23.66697 23.70275 23.70289 23.82514  
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25.69629 25.73719 25.85034 25.85491 25.87627 25.93342 25.93601 25.96420  
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[4,] 29.85226 29.93761 29.97282 30.55356 30.64969 30.90626 30.96085 31.57545  
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Supplementary Text 4

[,1321] [,1322] [,1323] [,1324] [,1325] [,1326] [,1327] [,1328]  
 [1,] 35.29025 35.74843 36.05069 36.17639 36.94872 37.00226 37.73972 38.23532  
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 37.43931 37.70909 37.93995 38.42348 45.21771 45.67352 45.89973 46.05780  
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 [,1329]  
 [1,] 48.56459  
 [2,] 46.57173  
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ENSEMBLE FLUCTUATION DATA (TRUNCATED MINIMIZED CHARACTERIZED CLASS C)

	[,1]	[,2]	[,3]	[,4]	[,5]		
[,6]	[,7]	[,8]	[,9]	[,10]	[,11]	[,12]	
truncated_NAT0_min3_2.pdb	0.2686120	0.3159591	0.2031525	0.1301167	0.08449354	0.07728656	
	0.09122293	0.08435095	0.07492049	0.07532367	0.06180074	0.06255590	
truncated_LJP6_min3_2.pdb	0.2877811	0.3271260	0.2037915	0.1287195	0.09208894	0.08388374	
	0.09726197	0.08971073	0.08277357	0.08445301	0.06709366	0.06190006	
truncated_3WY9_min3_2.pdb	0.2905862	0.2714322	0.1982417	0.1306096	0.08977540	0.08474345	
	0.09949776	0.08731032	0.08137949	0.08057904	0.06255494	0.06004946	
truncated_ZSP9_min3_2.pdb	0.2695810	0.4161586	0.2133221	0.1304265	0.09091895	0.08323717	
	0.09342747	0.08909486	0.08212028	0.08016562	0.06595004	0.06311620	
	[,13]	[,14]	[,15]	[,16]	[,17]		
[,18]	[,19]	[,20]	[,21]	[,22]	[,23]	[,24]	
truncated_NAT0_min3_2.pdb	0.09019069	0.08609215	0.07945822	0.08696955	0.09313863	0.09146197	
	0.09022025	0.09717740	0.08972347	0.08830529	0.1623856	0.2304689	
truncated_LJP6_min3_2.pdb	0.09234245	0.08379574	0.07783368	0.08277631	0.08629546	0.08481543	
	0.08640986	0.09689111	0.08552417	0.08583342	0.1539300	0.2290774	
truncated_3WY9_min3_2.pdb	0.08691951	0.08465812	0.07662810	0.08379442	0.08925975	0.08740776	
	0.08778938	0.09719148	0.08852958	0.08643517	0.1594846	0.2429677	
truncated_ZSP9_min3_2.pdb	0.08982278	0.08523186	0.07670428	0.08327990	0.09071973	0.08885493	
	0.08865433	0.09654066	0.08754311	0.08759966	0.1534706	0.2262190	
	[,25]	[,26]	[,27]	[,28]	[,29]		
[,30]	[,31]	[,32]	[,33]	[,34]	[,35]	[,36]	[,37]
truncated_NAT0_min3_2.pdb	0.3573638	0.7423731	0.5845159	0.3055955	0.2444315	0.1876411	0.2365323
	0.2452859	0.1936218	0.2198958	0.1495749	0.1136738	0.1107844	0.2239360
truncated_LJP6_min3_2.pdb	0.3608252	0.6916603	0.5580086	0.2908151	0.2379749	0.1845353	0.2412568
	0.1851295	0.2130263	0.1457016	0.1120302	0.1193249	0.1787985	0.2161762
truncated_3WY9_min3_2.pdb	0.3469702	0.7231355	0.5288983	0.2883561	0.2379384	0.1787985	0.2178282
	0.1823451	0.2141649	0.1515373	0.1141058	0.1201814	0.1810355	0.2166985
truncated_ZSP9_min3_2.pdb	0.3627680	0.8010653	0.6190711	0.2946309	0.2411108	0.1810355	0.2247755
	0.1813853	0.2088168	0.1436791	0.1123590	0.1079254		
	[,38]	[,39]	[,40]	[,41]	[,42]		
[,43]	[,44]	[,45]	[,46]	[,47]	[,48]	[,49]	
truncated_NAT0_min3_2.pdb	0.1577473	0.1819203	0.1106717	0.1140148	0.1909778	0.3005952	0.3142297
	0.3073622	0.2493300	0.1935721	0.1155648	0.1292841	0.2801997	0.3314022
truncated_LJP6_min3_2.pdb	0.1460414	0.2001416	0.1142078	0.1160066	0.1927309	0.2801997	0.3283650
	0.2627233	0.1951923	0.1165111	0.1297846			

Supplementary Text 4

truncated\_3WY9\_min3\_2.pdb 0.1407166 0.1964862 0.1193980 0.1217353 0.1959144  
0.2772054 0.3146073 0.3124329 0.2706675 0.2082149 0.1208917 0.1320033  
truncated\_ZSP9\_min3\_2.pdb 0.1406807 0.1858418 0.1135551 0.1188536 0.1934450  
0.2943423 0.3267280 0.3207666 0.2677378 0.2089317 0.1193021 0.1274233  
[,50] [,51] [,52] [,53] [,54]  
[,55] [,56] [,57] [,58] [,59] [,60] [,61]  
truncated\_NAT0\_min3\_2.pdb 0.09669973 0.09187585 0.08139909 0.07546209 0.08450696  
0.1263103 0.1231539 0.1182606 0.09812859 0.09894122 0.07958106 0.08863907  
truncated\_LJP6\_min3\_2.pdb 0.09757863 0.09005185 0.07837148 0.07014041 0.08594555  
0.1355788 0.1233058 0.1201541 0.09454183 0.09552642 0.07903082 0.08927727  
truncated\_3WY9\_min3\_2.pdb 0.09982974 0.09062791 0.07907229 0.07130768 0.08612635  
0.1145617 0.1252348 0.1154853 0.09233353 0.09894265 0.08156423 0.08963279  
truncated\_ZSP9\_min3\_2.pdb 0.09993375 0.09045105 0.07985490 0.07150883 0.08608821  
0.1146564 0.1281114 0.1168072 0.09402061 0.10057920 0.08149543 0.08921958  
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[,67] [,68] [,69] [,70] [,71] [,72]  
truncated\_NAT0\_min3\_2.pdb 0.09223453 0.08131647 0.07903866 0.06866571 0.06316109  
0.06844582 0.06670948 0.06261164 0.05890787 0.07011668 0.07167501  
truncated\_LJP6\_min3\_2.pdb 0.08848963 0.07887071 0.07352542 0.06449634 0.06190336  
0.06621199 0.06258515 0.06021919 0.05684112 0.06608144 0.07042316  
truncated\_3WY9\_min3\_2.pdb 0.08891605 0.08141111 0.07510585 0.06598543 0.06226474  
0.06742098 0.06433456 0.06078458 0.05762695 0.06761884 0.07104137  
truncated\_ZSP9\_min3\_2.pdb 0.08937591 0.08036136 0.07595258 0.06638456 0.06235131  
0.06749913 0.06477864 0.06156537 0.05757076 0.06776937 0.07116326  
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[,78] [,79] [,80] [,81] [,82] [,83] [,84]  
truncated\_NAT0\_min3\_2.pdb 0.07065972 0.08317331 0.08645824 0.09617869 0.1215854  
0.1325457 0.1187546 0.1320532 0.1397920 0.09778438 0.09967885 0.1233547  
truncated\_LJP6\_min3\_2.pdb 0.06983286 0.08282271 0.08811889 0.09181172 0.1158127  
0.1415655 0.1198444 0.1198733 0.1511791 0.10915286 0.10967507 0.1401048  
truncated\_3WY9\_min3\_2.pdb 0.07078445 0.08511801 0.08869073 0.09078412 0.1176756  
0.1388234 0.1189539 0.1194904 0.1450797 0.10794226 0.10576085 0.1373660  
truncated\_ZSP9\_min3\_2.pdb 0.07097880 0.08556787 0.08684984 0.09173655 0.1161791  
0.1434993 0.1179013 0.1174801 0.1391977 0.10415190 0.10252929 0.1326600  
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[,90] [,91] [,92] [,93] [,94] [,95] [,96]  
truncated\_NAT0\_min3\_2.pdb 0.1400251 0.1265017 0.1337110 0.1350727 0.1224247  
0.1462513 0.1221606 0.1029208 0.1109718 0.1120920 0.10208866 0.09751979  
truncated\_LJP6\_min3\_2.pdb 0.1507534 0.1379030 0.1385344 0.1373559 0.1234002  
0.1448548 0.1228466 0.1034885 0.1092446 0.1098082 0.09959289 0.09411577  
truncated\_3WY9\_min3\_2.pdb 0.1540137 0.1494673 0.1435327 0.1356146 0.1206612  
0.1473509 0.1185593 0.1055449 0.1123770 0.1090746 0.09947309 0.09498133  
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[,102] [,103] [,104] [,105] [,106] [,107] [,108]  
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0.08761522 0.09383325 0.1064549 0.09733085 0.09723079 0.1047954 0.2377562  
truncated\_LJP6\_min3\_2.pdb 0.08994306 0.09428143 0.08128741 0.08567113 0.09981591  
0.08604247 0.09418057 0.1061091 0.09734703 0.10166140 0.1068019 0.2355929  
truncated\_3WY9\_min3\_2.pdb 0.08943838 0.09293232 0.08217921 0.08562024 0.09896487  
0.08574296 0.09248656 0.1074127 0.09643489 0.09944387 0.1044185 0.2319530  
truncated\_ZSP9\_min3\_2.pdb 0.08886799 0.09299248 0.08160787 0.08611546 0.09948208  
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Supplementary Text 4

	[,109]	[,110]	[,111]	[,112]	[,113]			
[,114]	[,115]	[,116]	[,117]	[,118]	[,119]	[,120]		
truncated_NAT0_min3_2.pdb	0.2075683	0.1695089	0.1484952	0.1351191	0.09898613			
0.09304846	0.1048134	0.08877026	0.08933654	0.1094723	0.1564367	0.1715134		
truncated_LJP6_min3_2.pdb	0.1980074	0.1681288	0.1441961	0.1343825	0.10532055			
0.09383380	0.1049872	0.09118188	0.09076263	0.1073815	0.1512228	0.1661146		
truncated_3WY9_min3_2.pdb	0.1964417	0.1605090	0.1446940	0.1325748	0.10163987			
0.09275269	0.1021945	0.09129559	0.09219573	0.1122067	0.1502926	0.1706771		
truncated_ZSP9_min3_2.pdb	0.1960550	0.1623590	0.1423840	0.1345042	0.10177799			
0.09197260	0.1010503	0.09096486	0.09120976	0.1117049	0.1600674	0.1712602		
	[,121]	[,122]	[,123]	[,124]	[,125]			
[,126]	[,127]	[,128]	[,129]	[,130]	[,131]	[,132]	[,133]	
truncated_NAT0_min3_2.pdb	0.2049532	0.1842956	0.1300009	0.1769774	0.2496943			
0.2087167	0.1387728	0.1326096	0.1257390	0.1236555	0.1336157	0.1875095	0.2235900	
truncated_LJP6_min3_2.pdb	0.2198363	0.1853696	0.1305393	0.1810777	0.2461163			
0.2064646	0.1392420	0.1308304	0.1114540	0.1188816	0.1368059	0.1649414	0.2148153	
truncated_3WY9_min3_2.pdb	0.2165792	0.1851279	0.1366457	0.1754764	0.2506203			
0.2108910	0.1490996	0.1289300	0.1084153	0.1166767	0.1293753	0.1684905	0.2104650	
truncated_ZSP9_min3_2.pdb	0.2470375	0.1937220	0.1357804	0.1774165	0.2476356			
0.2005185	0.1473174	0.1338052	0.1128679	0.1201034	0.1364304	0.1736737	0.2283677	
	[,134]	[,135]	[,136]	[,137]	[,138]			
[,139]	[,140]	[,141]	[,142]	[,143]	[,144]	[,145]	[,146]	
truncated_NAT0_min3_2.pdb	0.3785678	0.2678273	0.3194278	0.1575077	0.1570737			
0.1114231	0.1064895	0.1051874	0.1066000	0.1372778	0.1810673	0.3448535	0.1809126	
truncated_LJP6_min3_2.pdb	0.3813042	0.2647363	0.3176591	0.1537291	0.1548016			
0.1112834	0.1078941	0.1109689	0.1208648	0.1344524	0.1880027	0.3555445	0.1824759	
truncated_3WY9_min3_2.pdb	0.4091268	0.2759712	0.3407028	0.1653689	0.1634416			
0.1151135	0.1101454	0.1035366	0.1040964	0.1303553	0.1775122	0.3250583	0.1547690	
truncated_ZSP9_min3_2.pdb	0.4561016	0.3132840	0.3762857	0.1766561	0.1630401			
0.1141811	0.1081787	0.1014643	0.1060459	0.1327825	0.1741540	0.3402254	0.1562512	
	[,147]	[,148]	[,149]	[,150]	[,151]			
[,152]	[,153]	[,154]	[,155]	[,156]	[,157]			
truncated_NAT0_min3_2.pdb	0.1035554	0.07495852	0.06592299	0.06548330	0.06583898			
0.05634442	0.04929218	0.05658499	0.05726726	0.05393186	0.05197507			
truncated_LJP6_min3_2.pdb	0.1089330	0.08317113	0.06951303	0.06729218	0.06788102			
0.05651978	0.04963625	0.05590482	0.05689959	0.05311364	0.05115351			
truncated_3WY9_min3_2.pdb	0.1008385	0.07366669	0.06633904	0.06408836	0.06630597			
0.05648636	0.04944718	0.05683383	0.05761642	0.05410006	0.05187278			
truncated_ZSP9_min3_2.pdb	0.0992648	0.06987115	0.06283868	0.06243684	0.06450304			
0.05482577	0.04875888	0.05585654	0.05643596	0.05276643	0.05099871			
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[,163]	[,164]	[,165]	[,166]	[,167]	[,168]	[,169]		
truncated_NAT0_min3_2.pdb	0.04917741	0.05563583	0.05466691	0.06389513	0.07038098			
0.08019165	0.1101439	0.1235640	0.1304695	0.1593705	0.3825810	0.3700569		
truncated_LJP6_min3_2.pdb	0.04770298	0.05456993	0.05381173	0.06115614	0.06886587			
0.07480319	0.1004569	0.1132255	0.1234980	0.1520186	0.3331405	0.3419008		
truncated_3WY9_min3_2.pdb	0.04854104	0.05503977	0.05397201	0.06188264	0.06894978			
0.07642362	0.1026399	0.1126064	0.1232753	0.1652356	0.3827028	0.3317116		
truncated_ZSP9_min3_2.pdb	0.04807003	0.05496386	0.05334952	0.06124102	0.06927373			
0.07700672	0.1041344	0.1185819	0.1268862	0.1615717	0.3618603	0.3303862		
	[,170]	[,171]	[,172]	[,173]	[,174]			
[,175]	[,176]	[,177]	[,178]	[,179]	[,180]	[,181]		
truncated_NAT0_min3_2.pdb	0.2692032	0.2140664	0.2866265	0.2030527	0.1232500			
0.1476909	0.1396321	0.08615813	0.08996765	0.1189478	0.09887427	0.07308994		

Supplementary Text 4

truncated\_LJP6\_min3\_2.pdb 0.2602052 0.2153610 0.2540220 0.1901206 0.1150139  
0.1460660 0.1462434 0.08926661 0.08784924 0.1210903 0.10030537 0.07335904  
truncated\_3WY9\_min3\_2.pdb 0.2662243 0.2108887 0.2651450 0.1970194 0.1189560  
0.1526129 0.1401629 0.08739189 0.08444130 0.1126247 0.10003755 0.07364542  
truncated\_ZSP9\_min3\_2.pdb 0.2786818 0.2204453 0.2637366 0.1941355 0.1163066  
0.1457277 0.1440033 0.08877227 0.08505891 0.1140736 0.09855782 0.07249773  
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truncated\_NAT0\_min3\_2.pdb 0.09370317 0.09375575 0.07278638 0.07731852 0.1137970  
0.09846006 0.07808354 0.1265892 0.1563974 0.1539979 0.1513621 0.1237684  
truncated\_LJP6\_min3\_2.pdb 0.09340736 0.09358982 0.07096841 0.07697556 0.1075429  
0.09290971 0.07578568 0.1259829 0.1571645 0.1431649 0.1487868 0.1331858  
truncated\_3WY9\_min3\_2.pdb 0.09256376 0.09447793 0.07238922 0.07865014 0.1122288  
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truncated\_ZSP9\_min3\_2.pdb 0.09038212 0.09314385 0.07105094 0.07579439 0.1076439  
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0.1652424 0.1797826 0.2748360 0.2535398 0.1996948 0.1660286 0.1505169  
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0.07495743 0.06528689 0.08055210 0.07714287 0.07202517 0.05851141 0.07196709  
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0.1248754 0.1802624 0.2501032 0.2705166 0.2692136 0.2333643 0.1183848  
truncated\_LJP6\_min3\_2.pdb 0.08011971 0.07405462 0.07921654 0.09508556 0.1305693  
0.1287230 0.1873729 0.2477171 0.2517355 0.2632502 0.2361189 0.1223993  
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0.2059635 0.1647737 0.1866075 0.2991791 0.2789752 0.2311345 0.2827907 0.3445316  
truncated\_LJP6\_min3\_2.pdb 0.1361938 0.1837851 0.1515688 0.1109346 0.1630966  
0.1979012 0.1529472 0.1725395 0.2719433 0.2296197 0.2193846 0.2604253 0.3307600  
truncated\_3WY9\_min3\_2.pdb 0.1397834 0.1831330 0.1506077 0.1171783 0.1762143  
0.1992468 0.1639358 0.1853518 0.2959250 0.2508466 0.2102340 0.2996974 0.4353912

Supplementary Text 4

truncated\_ZSP9\_min3\_2.pdb 0.1395332 0.1866225 0.1504927 0.1127834 0.1715680  
0.1935324 0.1565712 0.1914143 0.3118947 0.2898417 0.2216639 0.2715223 0.3219575  
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truncated\_NAT0\_min3\_2.pdb 0.4466746 0.9579352 1.529860 0.6946875 0.3090072  
0.3264733 0.1872513 0.10825874 0.1487796 0.1613702 0.1561135 0.09822503  
truncated\_LJP6\_min3\_2.pdb 0.4551334 0.8991528 1.155731 0.5803382 0.2750675  
0.2684778 0.1382449 0.08879658 0.1441864 0.1411581 0.1616687 0.09924718  
truncated\_3WY9\_min3\_2.pdb 0.4999261 1.1686636 1.561481 0.7143802 0.3189190  
0.3120323 0.1554913 0.09395286 0.1552655 0.1540940 0.1659230 0.09973019  
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0.08603974 0.09331216 0.1143687 0.1177321 0.1163896 0.1576626 0.2227396  
truncated\_LJP6\_min3\_2.pdb 0.08538959 0.09050392 0.08313150 0.0983110 0.09024187  
0.08329448 0.09443741 0.1113269 0.1177004 0.1150925 0.1568294 0.2079227  
truncated\_3WY9\_min3\_2.pdb 0.08709242 0.10051705 0.09369617 0.1030085 0.10120047  
0.08838528 0.10248759 0.1191052 0.1193593 0.1208224 0.1694336 0.2228789  
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0.1294873 0.1413648 0.1769187 0.1391202 0.1111261 0.1297526 0.1473590 0.1326868  
truncated\_LJP6\_min3\_2.pdb 0.2549661 0.2339436 0.3229288 0.3005296 0.2616171  
0.1301531 0.1358644 0.1628516 0.1307994 0.1100103 0.1249776 0.1356218 0.1247331  
truncated\_3WY9\_min3\_2.pdb 0.2559213 0.2495269 0.2927968 0.2802331 0.2677748  
0.1344142 0.1476145 0.1902895 0.1424392 0.1149758 0.1391062 0.1500845 0.1356685  
truncated\_ZSP9\_min3\_2.pdb 0.2787467 0.2595661 0.3186547 0.2906324 0.2805213  
0.1420767 0.1430415 0.1929851 0.1458979 0.1176451 0.1401155 0.1471050 0.1334500  
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truncated\_NAT0\_min3\_2.pdb 0.1253945 0.1307211 0.1328853 0.1613217 0.2073194  
0.2345360 0.2164879 0.7341382 0.5631539 0.5212324 0.2835056 0.2196368 0.1622782  
truncated\_LJP6\_min3\_2.pdb 0.1214724 0.1194566 0.1195014 0.1479773 0.1919774  
0.2379293 0.1909369 0.2344625 0.5132295 0.4393620 0.2632329 0.2152143 0.1707330  
truncated\_3WY9\_min3\_2.pdb 0.1354998 0.1337620 0.1317998 0.1617585 0.2038743  
0.2622867 0.2872526 0.6950085 0.6737631 0.5115841 0.2210423 0.1868661 0.1708879  
truncated\_ZSP9\_min3\_2.pdb 0.1296416 0.1274653 0.1282647 0.1478228 0.1893452  
0.2408116 0.2602491 0.3692869 0.5556511 0.5568699 0.2550246 0.1812830 0.1708013  
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truncated\_NAT0\_min3\_2.pdb 0.1695658 0.1763288 0.2850631 0.2174601 0.1801303  
0.1600808 0.1358143 0.1451290 0.2040465 0.2567553 0.1750246 0.1288274  
truncated\_LJP6\_min3\_2.pdb 0.1686409 0.1709885 0.2882097 0.2183656 0.1839729  
0.1518506 0.1376948 0.1454614 0.1901152 0.2194542 0.1571258 0.1349341  
truncated\_3WY9\_min3\_2.pdb 0.1721047 0.1629489 0.2637678 0.2024554 0.1773857  
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truncated\_ZSP9\_min3\_2.pdb 0.1755144 0.1747357 0.2794815 0.2019589 0.1734649  
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Supplementary Text 4

truncated\_NAT0\_min3\_2.pdb 0.08430270 0.09093378 0.08194044 0.08184055 0.08394334  
0.07891083 0.06655747 0.07364052 0.08231937 0.07747646 0.07847997  
truncated\_LJP6\_min3\_2.pdb 0.08601849 0.09153386 0.07910193 0.08277414 0.08432588  
0.07772506 0.06338902 0.07099074 0.08035726 0.07257090 0.07536938  
truncated\_3WY9\_min3\_2.pdb 0.08667092 0.08950323 0.07968298 0.08260946 0.08107955  
0.07590606 0.06285680 0.06899052 0.07877175 0.07304703 0.07309591  
truncated\_ZSP9\_min3\_2.pdb 0.08421055 0.08917806 0.07824884 0.08097869 0.08146894  
0.07356602 0.06225621 0.06784960 0.07740923 0.07079503 0.06933691  
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truncated\_NAT0\_min3\_2.pdb 0.08578950 0.08455040 0.08458299 0.1152886 0.1066052  
0.1115104 0.2072835 0.2232380 0.2173207 0.4487902 0.3577847 0.3462450  
truncated\_LJP6\_min3\_2.pdb 0.08026033 0.08041124 0.08824773 0.1150786 0.1071293  
0.1145122 0.2125355 0.2295213 0.2375932 0.4703038 0.4274002 0.3517427  
truncated\_3WY9\_min3\_2.pdb 0.08087155 0.08274250 0.08739705 0.1170382 0.1049628  
0.1131282 0.2100311 0.2361167 0.2328490 0.4647255 0.3910277 0.3661965  
truncated\_ZSP9\_min3\_2.pdb 0.07833306 0.08062553 0.08437707 0.1112385 0.1106659  
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0.1066376 0.1089936 0.1423811 0.1218894 0.09902331 0.10643530 0.1101946  
truncated\_LJP6\_min3\_2.pdb 0.3185622 0.1996421 0.1475681 0.1678918 0.1474245  
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truncated\_LJP6\_min3\_2.pdb 0.09524585 0.09683682 0.09490613 0.08842072 0.10067864  
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truncated\_3WY9\_min3\_2.pdb 0.09415773 0.09597737 0.09237079 0.08651620 0.09926233  
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truncated\_ZSP9\_min3\_2.pdb 0.08917869 0.09382731 0.09488622 0.08654185 0.09939120  
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truncated\_3WY9\_min3\_2.pdb 0.1324762 0.07963540 0.08463149 0.07866285 0.07853664  
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truncated\_LJP6\_min3\_2.pdb 0.1461072 0.09983707 0.09239387 0.08643679 0.09054367  
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Supplementary Text 4

truncated\_3WY9\_min3\_2.pdb 0.1591630 0.10574688 0.10134151 0.08801450 0.09016784  
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truncated\_ZSP9\_min3\_2.pdb 0.1589871 0.10754072 0.10091840 0.08821149 0.09229383  
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0.2635030 0.2704568 0.3283489 0.1892110 0.1190602 0.1645823 0.1457424 0.1574584  
truncated\_LJP6\_min3\_2.pdb 0.3017553 0.2044738 0.2508279 0.2321403 0.2735181  
0.2544773 0.2566171 0.2930540 0.1842632 0.1316078 0.1974299 0.1565060 0.1510294  
truncated\_3WY9\_min3\_2.pdb 0.3043532 0.2318418 0.2639452 0.2579396 0.2834316  
0.2426860 0.2414657 0.2852043 0.1886712 0.1276748 0.1816045 0.1290399 0.1565823  
truncated\_ZSP9\_min3\_2.pdb 0.3079053 0.2279315 0.2678646 0.2581335 0.2995013  
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0.06804804 0.07059852 0.09931365 0.1702947 0.1911623 0.2010709 0.2186556  
truncated\_LJP6\_min3\_2.pdb 0.1130255 0.07946660 0.06096401 0.07434723 0.06785891  
0.06753713 0.06966779 0.09485279 0.1574549 0.1787791 0.1988054 0.2143831  
truncated\_3WY9\_min3\_2.pdb 0.1153675 0.07868771 0.06082064 0.07630492 0.06921490  
0.06992444 0.07102154 0.10076583 0.1657148 0.1797512 0.1904166 0.2076219  
truncated\_ZSP9\_min3\_2.pdb 0.1172273 0.08175175 0.06172095 0.07689610 0.06856122  
0.06967360 0.06819198 0.09484648 0.1565601 0.1823735 0.2069538 0.2145658  
[,401] [,402] [,403] [,404] [,405]  
[,406] [,407] [,408] [,409] [,410] [,411] [,412]  
truncated\_NAT0\_min3\_2.pdb 0.1993619 0.2382938 0.2959271 0.2707251 0.1917515  
0.1729180 0.1176149 0.1788888 0.1531242 0.1118420 0.1616245 0.09431833  
truncated\_LJP6\_min3\_2.pdb 0.1994390 0.2423577 0.2865553 0.2437267 0.1842832  
0.1519158 0.1069372 0.1839982 0.1476651 0.1261584 0.1620593 0.09264110  
truncated\_3WY9\_min3\_2.pdb 0.1898464 0.2419930 0.2895201 0.2689853 0.2022348  
0.1692077 0.1151240 0.1857671 0.1549611 0.1110075 0.1656376 0.09452924  
truncated\_ZSP9\_min3\_2.pdb 0.1956604 0.2314823 0.2748979 0.2534959 0.1872510  
0.1611223 0.1184013 0.1798964 0.1524993 0.1093363 0.1566663 0.08883917  
[,413] [,414] [,415] [,416] [,417]  
[,418] [,419] [,420] [,421] [,422] [,423]  
truncated\_NAT0\_min3\_2.pdb 0.07493119 0.08480518 0.07727075 0.09818767 0.08322049  
0.07169741 0.06471988 0.07144674 0.06754021 0.07171830 0.06945023  
truncated\_LJP6\_min3\_2.pdb 0.07518844 0.08076936 0.07628957 0.10044287 0.07433371  
0.07032007 0.06340437 0.07212193 0.06347758 0.06820727 0.06840530  
truncated\_3WY9\_min3\_2.pdb 0.07381656 0.08632515 0.07855149 0.10324034 0.07861203  
0.06997920 0.06554094 0.07467691 0.06668955 0.06628565 0.06620596  
truncated\_ZSP9\_min3\_2.pdb 0.07342577 0.08599892 0.07867268 0.10169462 0.07842412  
0.07135751 0.06462859 0.07228392 0.06567992 0.06405025 0.06506868  
[,424] [,425] [,426] [,427] [,428]  
[,429] [,430] [,431] [,432] [,433] [,434] [,435]  
truncated\_NAT0\_min3\_2.pdb 0.07053294 0.07263665 0.06934686 0.06724454 0.07661396  
0.09450711 0.09821288 0.08898385 0.1409955 0.1749973 0.1767889 0.1496157  
truncated\_LJP6\_min3\_2.pdb 0.06876470 0.06392101 0.06710804 0.06975575 0.08320444  
0.09882768 0.10143471 0.09864541 0.1361861 0.1804721 0.2002087 0.1522454  
truncated\_3WY9\_min3\_2.pdb 0.06931196 0.06410859 0.06600633 0.06736726 0.08269815  
0.09632355 0.09468069 0.09216112 0.1216185 0.1531309 0.1790573 0.1673531  
truncated\_ZSP9\_min3\_2.pdb 0.06727587 0.06177655 0.06540717 0.06680464 0.08225203  
0.09725864 0.09746161 0.09137853 0.1200910 0.1755757 0.1938585 0.1517736

Supplementary Text 4

[,441]	[,442]	[,443]	[,444]	[,445]	[,436]	[,437]	[,438]	[,439]	[,440]	
truncated_NAT0_min3_2.pdb	0.1345061	0.8410219	0.4643539	0.3595612	0.4796191	0.8092008	0.9812930	1.7597183	2.1595574	2.8240312
truncated_LJP6_min3_2.pdb	0.1336010	0.1976106	0.1580230	0.3165870	0.6935557	0.8154912	0.4906173	0.3865080	0.5162733	0.4260776
truncated_3WY9_min3_2.pdb	0.1457332	0.3707547	0.7142533	0.7295207	0.4677534	0.3498115	0.5011035	0.4419466	0.4099050	0.9035446
truncated_ZSP9_min3_2.pdb	0.1414303	0.8183968	0.4225198	0.3250661	0.4741645	0.7056796	0.7895093	1.2710228	1.3196872	1.2900109