# Supplementary Material

# Properties of Fourier Syntheses and New Syntheses

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## Additional information for protein and nucleic acid test structures

**Table S1.** For each protein text structure (solved by VLD or by Patterson techniques) we quote: the Protein Data Bank code (PDB), the space group (SG), the diffraction data resolution in Å (RES) and the number of non-H atoms in the asymmetric $N_{asym}$. The method used to solve the structure (VLD or by Patterson techniques) is reported in the last column. The reference numbers are shown in square brackets (see the main text).

| PDB | SG | RES | $N_{asym}$ | Method |
|---|---|---|---|---|
| 1aa5 [32] | P $4_3$ $2_1$ 2 | 0.89 | 200 | VLD |
| 1alz [33] | P $2_1$ $2_1$ $2_1$ | 0.86 | 313 | " |
| 1byz [34] | P 1 | 0.90 | 445 | " |
| 1c75 [35] | P $2_1$ $2_1$ $2_1$ | 0.97 | 538 | " |
| 1ctj [36] | R 3 | 1.10 | 697 | " |
| 1hhy [37] | P $6_3$ 2 2 | 0.89 | 208 | " |
| 1ick [38] | P $2_1$ $2_1$ $2_1$ | 0.95 | 250 | " |
| 1irn [39] | R 3 | 1.20 | 420 | " |
| 1p9i [40] | C 2 2 $2_1$ | 1.17 | 234 | " |
| 1sho [41] | P $4_3$ $2_1$ 2 | 1.09 | 207 | " |
| 1ea7 [42] | P $2_1$ | 0.93 | 2344 | Patterson |
| 1het [43] | P 1 | 1.15 | 6258 | " |
| 1heu [43] | P 1 | 1.15 | 6319 | " |
| 1n8k [44] | P 1 | 1.13 | 5717 | " |
| 1us0 [45] | P $2_1$ | 0.66 | 3066 | " |
| 1w8f [46] | P 1 | 1.05 | 3801 | " |
| 2bw4 [47] | P $2_1$ 3 | 0.90 | 2914 | " |

**Table S2.** For each nucleic acid test structure we quote: the Protein Data Bank code (PDB), the space group (SG), the diffraction data resolution in Å (RES) and the number of non-H atoms in the asymmetric $N_{asym}$. All the structures were solved by using Molecular Replacement techniques. The reference numbers are shown in square brackets (see the main text).

| PDB | SG | RES | $N_{asym}$ |
|---|---|---|---|
| 3ce5 [49] | I 4 | 2.50 | 549 |
| 3eil [50] | P $3_2$ | 2.60 | 1597 |
| 3n4o [51] | P $2_1$ $2_1$ $2_1$ | 2.90 | 495 |
| 3tok [52] | C 2 | 1.74 | 448 |
| 4gsg [53] | C 2 | 2.00 | 449 |
| 4ms5 [54] | P $4_3$ $2_1$ 2 | 2.23 | 227 |
| 4xqz [55] | P $2_1$ | 2.15 | 1084 |
| 5dwx [56] | P 4 $2_1$ 2 | 2.71 | 728 |
| 5i4s [57] | R 3 | 2.46 | 496 |
| 5ihd [55] | P $2_1$ | 1.57 | 542 |
| 5ju4 [58] | P $2_1$ $2_1$ $2_1$ | 2.00 | 536 |
| 5lj4 [59] | R 3 | 2.17 | 448 |
| 5mvt [60] | P $3_1$ 2 1 | 1.89 | 535 |
| 5nt5 [61] | P $2_1$ $2_1$ $2_1$ | 2.30 | 536 |
| 5t4w [62] | P $2_1$ $2_1$ $2_1$ | 2.30 | 534 |
| 1iha [63] | C 2 | 1.60 | 400 |
| 1z7f [64] | P $3_1$ 2 1 | 2.10 | 1046 |
| 2a0p [65] | R 3 2 | 1.95 | 362 |
| 2fd0 [66] | C 2 2 $2_1$ | 1.80 | 1033 |
| 2pn4 [67] | P $2_1$ $2_1$ $2_1$ | 2.32 | 1958 |
| 3d2v [68] | P $2_1$ $2_1$ 2 | 2.00 | 3466 |
| 3fs0 [69] | P $3_1$ | 2.30 | 477 |
| 4enc [70] | P $2_1$ $2_1$ 2 | 2.27 | 1168 |
| 5kvj [71] | R 3 | 2.26 | 714 |
| 5l4o [72] | P $3_2$ 1 2 | 2.80 | 1721 |
| 5nz6 [73] | P $3_2$ 1 2 | 2.94 | 970 |
| 5tgp [74] | P $6_1$ | 1.60 | 257 |
| 5uz6 [75] | C 2 | 2.10 | 2158 |
| 6az4 [75] | P $4_1$ $2_1$ 2 | 2.98 | 918 |