块大小实验

Human genome

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| m | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 | 64 | 128 | 256 | 512 | 1024 | 2048 |
| iepsm4 | 222.26 | 171.72 | 153.36 | 132.11 | 115.68 | 113.67 | 111.29 | 102.82 | 88.30 | 87.23 | 71.67 | 75.35 | 60.29 | 65.02 | 49.22 |
| iepsm5 | 239.58 | 163.69 | 126.67 | 104.93 | 92.56 | 83.11 | 80.42 | 74.29 | 68.73 | 58.19 | 46.84 | 45.37 | 41.98 | 44.24 | 33.15 |
| iepsm6 | 258.70 | 163.13 | 120.26 | 97.91 | 82.80 | 70.56 | 62.73 | 60.62 | 55.70 | 46.81 | 39.05 | 34.25 | 25.84 | 23.27 | 21.36 |
| iepsm7 | 305.05 | 176.46 | 124.29 | 99.13 | 84.57 | 72.24 | 65.95 | 58.82 | 54.45 | 43.67 | 37.34 | 30.64 | 23.43 | 17.50 | 14.87 |
| iepsm8 | 373.08 | 187.76 | 130.78 | 99.88 | 84.84 | 72.03 | 64.51 | 56.54 | 53.99 | 42.60 | 36.76 | 28.68 | 18.39 | 14.12 | 11.26 |

Human protein

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| m | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 | 64 | 128 | 256 | 512 | 1024 | 2048 |
| iepsm4 | 181.26 | 126.72 | 95.36 | 76.11 | 81.68 | 57.67 | 52.29 | 47.82 | 43.62 | 37.23 | 36.67 | 23.35 | 18.29 | 11.45 | 11.22 |
| iepsm5 | 217.58 | 142.69 | 108.67 | 88.93 | 88.56 | 63.11 | 56.42 | 50.29 | 45.21 | 39.19 | 36.84 | 25.37 | 18.98 | 13.24 | 11.15 |
| iepsm6 | 253.70 | 155.13 | 114.26 | 91.91 | 89.80 | 65.56 | 58.73 | 53.62 | 45.96 | 37.81 | 34.05 | 25.25 | 19.84 | 12.27 | 11.36 |
| iepsm7 | 301.05 | 170.46 | 123.29 | 96.13 | 93.57 | 68.24 | 59.95 | 53.82 | 46.14 | 40.67 | 36.34 | 26.64 | 19.43 | 12.50 | 11.87 |
| iepsm8 | 369.08 | 185.76 | 129.78 | 98.88 | 94.84 | 68.03 | 60.51 | 53.54 | 45.32 | 38.60 | 34.76 | 23.68 | 17.39 | 11.12 | 10.26 |

不同算法在各种类型数据下的对比实验

Homo\_sapiens.GRCh38.dna.primary\_assembly.fa.gz

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 | 64 | 128 | 256 | 512 | 1024 | 2048 |
| iepsm | 1832.40 | 1264.26 | 928.72 | 776.36 | 616.11 | 560.68 | 536.67 | 424.29 | 400.82 | 320.62 | 280.23 | 200.67 | 136.35 | 96.29 | 88.02 |
| epsm | 2344.22 | 1808.58 | 1856.69 | 960.67 | 976.93 | 680.56 | 696.11 | 520.42 | 528.29 | 368.21 | 304.19 | 240.84 | 192.37 | 160.98 | 136.24 |
| hashq | 4720.15 | 3536.70 | 3528.13 | 2424.26 | 2200.91 | 1936.80 | 1592.56 | 1672.73 | 1488.62 | 1304.96 | 840.81 | 1080.05 | 904.25 | 576.84 | 952.27 |
| tvsbs | 6080.36 | 7264.05 | 6016.46 | 4960.29 | 3200.13 | 4640.57 | 3320.24 | 3624.95 | 3440.82 | 3800.14 | 2352.67 | 3216.34 | 3128.64 | 1632.43 |  |
| ufndmq | 2008.87 | 1592.08 | 1368.76 | 1272.78 | 968.88 |  |  |  |  | 1040.32 | 1040.60 | 1056.76 | 1000.68 | 1192.39 |  |
| fsbndmq | 3736.26 | 2664.86 | 2360.94 | 2320.39 | 1736.95 | 1768.70 | 1928.34 | 1864.78 | 1800.67 | 1896.97 | 1760.02 | 1808.17 | 1704.92 | 1848.52 | 1848.56 |

Oryza\_sativa.IRGSP-1.0.24.dna.genome.fa.gz

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 | 64 | 128 | 256 | 512 | 1024 | 2048 |
| iepsm | 228.40 | 151.26 | 114.72 | 91.36 | 78.11 | 68.68 | 61.67 | 54.29 | 52.82 | 41.62 | 35.23 | 26.67 | 18.35 | 13.29 | 12.02 |
| epsm | 292.22 | 225.58 | 224.69 | 117.67 | 119.93 | 83.56 | 87.11 | 66.42 | 67.29 | 46.21 | 38.19 | 32.84 | 24.37 | 21.98 | 17.24 |
| hashq | 566.15 | 418.70 | 339.13 | 286.26 | 249.91 | 218.80 | 210.56 | 194.73 | 339.62 | 155.96 | 199.81 | 133.05 | 77.25 | 101.84 | 78.27 |
| tvsbs | 714.36 | 511.05 | 498.46 | 407.29 | 480.13 | 481.57 | 404.24 | 417.95 | 381.82 | 351.14 | 408.67 | 400.34 | 214.64 | 327.43 |  |
| ufndmq | 247.87 | 183.08 | 166.76 | 130.78 | 125.88 |  |  |  |  | 124.32 | 129.60 | 123.76 | 117.68 | 129.39 |  |
| fsbndmq | 497.26 | 344.86 | 314.94 | 264.39 | 232.95 | 209.70 | 201.34 | 225.78 | 206.67 | 220.97 | 216.02 | 218.17 | 196.92 | 214.52 | 223.56 |

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|  | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 | 64 | 128 | 256 | 512 | 1024 | 2048 |
| iepsm | 2.11 | 1.58 | 1.17 | 0.95 | 0.79 | 0.72 | 0.63 | 0.53 | 0.52 | 0.41 | 0.34 | 0.26 | 0.17 | 0.13 | 0.11 |
| epsm | 2.70 | 1.79 | 1.58 | 1.21 | 1.21 | 0.86 | 0.86 | 0.67 | 0.67 | 0.45 | 0.39 | 0.31 | 0.25 | 0.21 | 0.17 |
| hashq | 5.75 | 4.32 | 3.43 | 2.90 | 2.82 | 2.44 | 2.28 | 2.06 | 1.97 | 1.50 | 1.12 | 1.24 | 0.90 | 1.09 | 0.84 |
| tvsbs | 8.72 | 5.28 | 5.19 | 4.63 | 5.49 | 5.67 | 6.48 | 4.91 | 6.01 | 3.98 | 5.92 | 5.43 | 3.46 | 3.56 |  |
| ufndmq | 2.40 | 1.96 | 1.65 | 1.42 | 1.25 |  |  |  |  | 1.23 | 1.28 | 1.25 | 1.33 | 1.29 |  |
| fsbndmq | 4.44 | 3.89 | 3.06 | 2.73 | 2.31 | 2.12 | 2.32 | 2.28 | 2.31 | 2.22 | 2.34 | 2.21 | 2.40 | 2.27 | 2.26 |

Homo\_sapiens.GRCh38.pep.all.fa.gz

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 | 64 | 128 | 256 | 512 | 1024 | 2048 |
| iepsm | 22.93 | 13.81 | 10.97 | 8.48 | 7.23 | 7.85 | 5.85 | 5.48 | 5.09 | 4.29 | 4.03 | 2.85 | 1.82 | 1.37 | 1.22 |
| epsm | 23.92 | 13.10 | 13.33 | 10.49 | 10.88 | 10.40 | 9.57 | 7.27 | 7.37 | 5.02 | 4.13 | 3.32 | 2.60 | 2.11 | 1.69 |
| hashq | 61.35 | 43.74 | 34.90 | 28.81 | 24.88 | 22.20 | 20.06 | 18.19 | 23.74 | 11.00 | 9.31 | 7.45 | 7.36 | 9.43 | 5.81 |
| tvsbs | 36.04 | 23.78 | 22.83 | 17.70 | 17.90 | 14.40 | 12.69 | 12.33 | 9.87 | 6.68 | 5.63 | 5.70 | 6.07 | 5.16 |  |
| ufndmq | 24.87 | 17.45 | 14.20 | 11.98 | 10.32 |  |  |  |  | 10.26 | 11.96 | 10.42 | 10.19 | 10.15 |  |
| fsbndmq | 26.25 | 25.73 | 25.74 | 13.52 | 13.77 | 11.74 | 8.59 | 9.86 | 8.74 | 8.89 | 13.34 | 9.57 | 9.10 | 9.84 | 9.40 |

Oryza\_sativa.IRGSP-1.0.24.pep.all.fa.gz

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 | 64 | 128 | 256 | 512 | 1024 | 2048 |
| iepsm | 7.22 | 4.91 | 3.79 | 3.02 | 2.56 | 2.33 | 2.18 | 2.31 | 1.74 | 1.53 | 1.36 | 0.98 | 0.67 | 0.51 | 0.40 |
| epsm | 7.36 | 5.89 | 4.85 | 4.07 | 3.45 | 3.33 | 3.36 | 2.77 | 2.61 | 1.76 | 1.46 | 1.19 | 0.92 | 0.75 | 0.66 |
| hashq | 22.51 | 15.59 | 12.16 | 10.41 | 8.70 | 7.94 | 7.33 | 6.69 | 5.93 | 4.55 | 3.24 | 2.50 | 2.76 | 3.54 | 2.21 |
| tvsbs | 11.22 | 10.10 | 7.87 | 7.06 | 5.61 | 5.43 | 4.71 | 4.40 | 3.54 | 3.01 | 2.13 | 1.92 | 2.13 | 1.72 |  |
| ufndmq | 8.24 | 6.20 | 5.14 | 4.19 | 3.64 |  |  |  |  | 3.57 | 3.63 | 3.64 | 3.58 | 3.62 |  |
| fsbndmq | 9.11 | 9.03 | 9.13 | 4.83 | 4.85 | 3.44 | 3.52 | 4.09 | 3.18 | 3.55 | 3.30 | 3.16 | 3.40 | 3.33 | 3.38 |

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|  | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 | 64 | 128 | 256 | 512 | 1024 | 2048 |
| iepsm | 0.64 | 0.44 | 0.34 | 0.27 | 0.22 | 0.20 | 0.19 | 0.17 | 0.16 | 0.13 | 0.12 | 0.09 | 0.06 | 0.04 | 0.03 |
| epsm | 0.67 | 0.57 | 0.39 | 0.38 | 0.31 | 0.30 | 0.29 | 0.23 | 0.22 | 0.16 | 0.13 | 0.11 | 0.08 | 0.07 | 0.06 |
| hashq | 1.92 | 1.37 | 1.09 | 0.90 | 0.78 | 0.70 | 0.61 | 0.57 | 0.53 | 0.39 | 0.29 | 0.22 | 0.22 | 0.22 | 0.20 |
| tvsbs | 1.00 | 0.92 | 0.65 | 0.66 | 0.48 | 0.45 | 0.49 | 0.37 | 0.35 | 0.27 | 0.17 | 0.17 | 0.19 | 0.16 |  |
| ufndmq | 0.72 | 0.54 | 0.44 | 0.37 | 0.33 |  |  |  |  | 0.32 | 0.32 | 0.32 | 0.32 | 0.32 |  |
| fsbndmq | 0.82 | 0.80 | 0.81 | 0.42 | 0.42 | 0.31 | 0.33 | 0.30 | 0.33 | 0.31 | 0.32 | 0.30 | 0.27 | 0.30 | 0.30 |