| 19 MF ključnih reči sa najznačajnijom predviđenom uređenošću (org. 2007) |                           |        |            |         |         |         |
|--|---------------------------|--------|------------|---------|---------|---------|
| #  | name                      | n prot | n families | avg_len | Z-score | P-value |
| 0  | Oxidoreductase            | 14995  | 992        | 376.63  | -29.54  | 0       |
| 1  | Transferase               | 26525  | 1606       | 445.17  | -24.25  | 0       |
| 2  | Lyase                     | 7262   | 347        | 377.92  | -22.64  | 0       |
| 3  | Hydrolase                 | 20464  | 1995       | 430.68  | -21.75  | 0       |
| 4  | Isomerase                 | 4487   | 220        | 383.98  | -14.18  | 0       |
| 5  | Glycosidase               | 1826   | 244        | 444.73  | -13.98  | 0       |
| 6  | Glycosyltransferase       | 2950   | 261        | 437.53  | -12.51  | 0       |
| 7  | Acyltransferase           | 2239   | 179        | 402.83  | -10.85  | 0       |
| 8  | Methyltransferase         | 3524   | 224        | 349.60  | -10.53  | 0       |
| 9  | Kinase                    | 7017   | 322        | 448.29  | -10.22  | 0       |
| 10   | Ligase                    | 8010   | 230        | 529.41  | -10.06  | 0       |
| 11   | Decarboxylase             | 1293   | 63         | 345.26  | -9.66   | 0       |
| 12   | Monooxygenase             | 1668   | 73         | 444.87  | -9.26   | 0       |
| 13   | Metalloprotease           | 1100   | 109        | 553.73  | -7.89   | 0       |
| 14   | Aminopeptidase            | 452    | 39         | 509.17  | -7.55   | 0       |
| 15   | Dioxygenase               | 360    | 66         | 433.20  | -7.32   | 0       |
| 16   | Aminoacyl-tRNA synthetase | 3402   | 37         | 571.83  | -7.15   | 0       |
| 17   | Protease                  | 4423   | 380        | 549.70  | -7.1    | 0       |
| 18   | Aminotransferase          | 955    | 28         | 420.27  | -6.02   | 0       |

| щ  | Predviđene uređene MF ključne reči iz ovoga rada (z-skor < -0.2) |        |             |         |            |      |  |  |
|----|--|--------|-------------|---------|------------|------|--|--|
| #  | name   | n 4126 | avg_len     | avg_dis | Z<br>41.25 | p    |  |  |
| 0  | Oxidoreductase   | 4126   | 472.25      | 0.28    | -41.35     | 0    |  |  |
| 1  | Hydrolase  | 7564   | 614.81      | 0.51    | -26.99     | 0    |  |  |
| 2  | Lyase  | 1431   | 481.37      | 0.30    | -23.62     | 0    |  |  |
| 3  | Monooxygenase  | 555    | 503.36      | 0.20    | -20.29     | 0    |  |  |
| 4  | Transferase  | 8846   | 631.95      | 0.55    | -19.72     | 0    |  |  |
| 5  | Ligase   | 995    | 693.30      | 0.46    | -18.05     | 0    |  |  |
| 6  | Glycosyltransferase  | 1134   | 551.26      | 0.40    | -17.04     | 0    |  |  |
| 7  | Glycosidase  | 697    | 570.50      | 0.37    | -16.81     | 0    |  |  |
| 8  | Isomerase  | 931    | 422.72      | 0.35    | -13.60     | 0    |  |  |
| 9  | Protease   | 1863   | 674.42      | 0.54    | -13.20     | 0    |  |  |
| 10 | Transducer   | 1703   | 482.28      | 0.41    | -12.56     | 0    |  |  |
| 11 | G-protein coupled receptor                                       | 1385   | 465.62      | 0.39    | -12.45     | 0    |  |  |
| 12 | Acyltransferase  | 867    | 531.58      | 0.42    | -11.28     | 0    |  |  |
| 13 | Decarboxylase  | 195    | 488.21      | 0.25    | -10.70     | 0    |  |  |
| 14 | Aminotransferase   | 202    | 451.05      | 0.24    | -10.23     | 0    |  |  |
| 15 | Aminopeptidase   | 130    | 668.72      | 0.37    | -9.10      | 0    |  |  |
| 16 | Serine protease  | 460    | 700.07      | 0.50    | -8.87      | 0    |  |  |
| 17 | Metalloprotease  | 507    | 688.25      | 0.56    | -8.43      | 0    |  |  |
| 18 | Methyltransferase  | 874    | 611.22      | 0.47    | -8.33      | 0    |  |  |
| 19 | Carboxypeptidase   | 116    | 631.16      | 0.37    | -8.25      | 0    |  |  |
| 20 | Threonine protease   | 138    | 246.88      | 0.18    | -7.50      | 0    |  |  |
| 21 | Dioxygenase  | 366    | 622.32      | 0.48    | -7.39      | 0    |  |  |
| 22 | Serine esterase  | 141    | 423.09      | 0.28    | -7.21      | 0    |  |  |
| 23 | Receptor   | 3424   | 647.92      | 0.59    | -7.09      | 0    |  |  |
| 24 | Nucleotidyltransferase   | 600    | 969.68      | 0.63    | -6.18      | 0    |  |  |
| 25 | Peroxidase   | 221    | 457.61      | 0.40    | -5.50      | 0    |  |  |
| 26 | Serine protease inhibitor  | 182    | 497.66      | 0.38    | -4.92      | 0    |  |  |
| 27 | Porin  | 63     | 318.84      | 0.21    | -4.55      | 0    |  |  |
| 28 | Dipeptidase  | 22     | 522.27      | 0.23    | -4.43      | 0    |  |  |
| 29 | Integrin   | 71     | 1038.25     | 0.70    | -4.29      | 0    |  |  |
| 30 | Protease inhibitor   | 284    | 446.29      | 0.41    | -4.15      | 0    |  |  |
| 31 | RNA-directed RNA polymerase                                      | 62     | 2506.11     | 0.87    | -4.11      | 0    |  |  |
| 32 | Neurotoxin   | 66     | 209.62      | 0.17    | -3.80      | 0    |  |  |
| 33 | Hemagglutinin  | 23     | 281.22      | 0.13    | -3.37      | 0    |  |  |
| 34 | Retinal protein  | 47     | 384.06      | 0.28    | -3.37      | 0    |  |  |
| 35 | Myosin   | 185    | 1275.20     | 0.72    | -3.29      | 0    |  |  |
| 36 | Photoreceptor protein  | 77     | 540.68      | 0.47    | -3.02      | 0.01 |  |  |
| 37 | Prenyltransferase  | 39     | 376.21      | 0.31    | -2.59      | 0.01 |  |  |
| 38 | Elongation factor  | 106    | 467.68      | 0.48    | -2.59      | 0.01 |  |  |
| 39 | Endonuclease   | 443    | 728.14      | 0.60    | -2.59      | 0.01 |  |  |
| 40 | Toxin  | 214    | 412.51      | 0.39    | -2.56      | 0    |  |  |
| 41 | Bacteriolytic enzyme   | 35     | 434.66      | 0.31    | -2.53      | 0.01 |  |  |
| 42 | Nuclease   | 703    | 668.54      | 0.60    | -2.49      | 0.01 |  |  |
| 43 | Ion channel impairing toxin                                      | 60     | 74.92       | 0.15    | -2.47      | 0    |  |  |
| 44 | Voltage-gated sodium channe                                      | 22     | 79.55       | 0.05    | -2.42      | 0.01 |  |  |
| 45 | Aspartyl protease  | 120    | 942.30      | 0.64    | -2.39      | 0.01 |  |  |
| 46 | Hemostasis impairing toxin                                       | 55     | 297.55      | 0.35    | -2.10      | 0.02 |  |  |
| 47 | Thiol protease inhibitor   | 63     | 411.06      | 0.35    | -2.04      | 0.02 |  |  |
| 48 | tRNA-binding   |        | 1 - 2 - 0 0 | L       |            | 1.00 |  |  |

|                             | P  | Predviđeni uređeni MF termini dobijeni iz direktnog i izvedenog mapiranja |             |                  |           |                |      |  |  |  |
|-----------------------------|----|---|-------------|------------------|-----------|----------------|------|--|--|--|
|                             | #  | name  | n avg_len   |                  | avg_dis z |                | p    |  |  |  |
|                             | 0  | catalytic activity  | 28179       | 569.86           | 0.48      | -52.25         | 0    |  |  |  |
| $\forall$                   | 1  | oxidoreductase activity   | 4986        | 450.49           | 0.30      | -39.62         | 0    |  |  |  |
| +                           | 2  | hydrolase activity  | 11097       | 623.94           | 0.53      | -27.76         | 0    |  |  |  |
| $\mid \mid$                 | 3  | lyase activity  | 1624        | 480.74           | 0.31      | -24.47         | 0    |  |  |  |
| $\vdash$                    | 4  | monooxygenase activity  | 633         | 511.13           | 0.22      | -21.40         | 0    |  |  |  |
|                             | 5  | transporter activity  | 5388        | 621.16           | 0.53      | -19.15         | 0    |  |  |  |
|                             | 6  | transferase activity  | 10428       | 619.96           | 0.56      | -18.80         | 0    |  |  |  |
|                             | 7  | transferase activity, trans   | 1343        | 545.86           | 0.41      | -18.49         | 0    |  |  |  |
|                             | 8  | ligase activity   | 1097        | 675.42           | 0.46      | -16.68         | 0    |  |  |  |
|                             | 9  | hydrolase activity, acting  | 934         | 548.13           | 0.39      | -16.32         | 0    |  |  |  |
|                             | 10 | isomerase activity  | 1046        | 425.93           | 0.35      | -14.19         | 0    |  |  |  |
|                             | 11 | transferase activity, trans   | 1235        | 540.97           | 0.43      | -13.31         | 0    |  |  |  |
|                             | 12 | carboxy-lyase activity  | 292         | 494.47           | 0.26      | -13.09         | 0    |  |  |  |
|                             | 13 | peptidase activity  | 2211        | 644.11           | 0.53      | -13.05         | 0    |  |  |  |
|                             | 14 | G-protein coupled receptor  | 1473        | 465.64           | 0.40      | -12.30         | 0    |  |  |  |
| <b>/</b>                    | 15 | carboxylic ester hydrolase  | 628         | 482.21           | 0.37      | -12.01         | 0    |  |  |  |
|                             | 16 | serine-type peptidase activity  | 708         | 614.43           | 0.46      | -10.79         | 0    |  |  |  |
|                             | 17 | aminopeptidase activity   | 177         | 633.80           | 0.35      | -10.74         | 0    |  |  |  |
|                             | 18 | transaminase activity   | 230         | 459.43           | 0.26      | -10.46         | 0    |  |  |  |
|                             | 19 | methyltransferase activity  | 947         | 607.08           | 0.48      | -8.77          | 0    |  |  |  |
|                             | 20 | carboxypeptidase activity   | 143         | 596.81           | 0.34      | -8.54          | 0    |  |  |  |
|                             | 21 | metallopeptidase activity   | 632         | 663.90           | 0.56      | -8.44          | 0    |  |  |  |
|                             | 22 | ATP binding   | 7585        | 801.90           | 0.69      | -8.22          | 0    |  |  |  |
|                             | 23 | dioxygenase activity  | 419         | 604.98           | 0.48      | -7.83          | 0    |  |  |  |
|                             | 24 | peroxidase activity   | 282         | 414.57           | 0.34      | -7.11          | 0    |  |  |  |
| ╮                           | 25 | antioxidant activity  | 499         | 344.42           | 0.36      | -6.89          | 0    |  |  |  |
| `                           | 26 | threonine-type endopeptidas   | 139         | 247.87           | 0.19      | -6.79          | 0    |  |  |  |
|                             | 27 | nucleotidyltransferase acti   | 892         | 805.20           | 0.59      | -6.07          | 0    |  |  |  |
|                             | 28 | porin activity  | 76          | 369.24           | 0.22      | -5.22          | 0    |  |  |  |
|                             | 29 | serine-type endopeptidase i   | 218         | 485.65           | 0.40      | -4.99          | 0    |  |  |  |
|                             | 30 | phospholipase A2 activity   | 93          | 377.39           | 0.30      | -4.93          | 0    |  |  |  |
|                             | 31 | phospholipase D activity  | 37          | 778.27           | 0.43      | -4.87          | 0    |  |  |  |
| 1                           | 32 | prenyltransferase activity  | 128         | 369.37           | 0.32      | -4.70          | 0    |  |  |  |
| $ \langle \langle \rangle $ | 33 | toxin activity  | 285         | 349.98           | 0.32      | -4.59          | 0    |  |  |  |
| 7                           | 34 | dipeptidase activity  | 41          | 557.73           | 0.34      | -4.23          | 0    |  |  |  |
|                             | 35 | metalloendopeptidase activity   | 369         | 711.73           | 0.63      | -4.22          | 0    |  |  |  |
|                             | 36 | phospholipase A2 activity (   | 70          | 365.39           | 0.30      | -3.90          | 0    |  |  |  |
|                             | 37 | endonuclease activity   | 773         | 658.33           | 0.59      | -3.85          | 0    |  |  |  |
|                             | 38 | antigen binding   | 277         | 345.87           | 0.38      | -3.68          | 0    |  |  |  |
|                             | 40 | translation elongation fact nuclease activity                             | 116<br>1124 | 464.12<br>659.17 | 0.46      | -3.35<br>-3.20 | 0    |  |  |  |
| ~                           | 40 | G-protein coupled photorece   | 44          | 390.23           | 0.30      | -3.20          | 0    |  |  |  |
|                             | 42 | chloride channel activity   | 195         | 622.49           | 0.62      | -2.99          | 0.01 |  |  |  |
| A                           | 43 | RNA-directed 5'-3' RNA poly   | 75          | 2341.31          | 0.02      | -2.57          | 0.01 |  |  |  |
| []                          | 44 | tRNA binding  | 247         | 566.35           | 0.57      | -2.39          | 0.02 |  |  |  |
| N                           | 45 | peptidase inhibitor activity  | 446         | 493.46           | 0.57      | -2.38          | 0.01 |  |  |  |
| H                           | 46 | photoreceptor activity  | 91          | 574.22           | 0.54      | -2.30          | 0.01 |  |  |  |
|                             | 47 | glucan endo-1,3-beta-D-gluc   | 28          | 522.18           | 0.43      | -2.29          | 0.02 |  |  |  |
| 1                           | 48 | signal transducer activity  | 4149        | 619.06           | 0.43      | -2.17          | 0.02 |  |  |  |
|                             | 49 | aminoacyl-tRNA ligase activity  | 255         | 659.40           | 0.67      | -1.93          | 0.04 |  |  |  |
|                             | 50 | cysteine-type endopeptidase   | 262         | 953.41           | 0.64      | -1.65          | 0.05 |  |  |  |
|                             |    |   |             | I                |           | I .            |      |  |  |  |