

Additional file 3. Predicted catalytic and substrate binding residues in ChiJ.

Comparison of residues of *Streptomyces* ChiJ model (STRP) corresponding to catalysis (red) and substrate binding (black) in *Serratia marcescens* chitinase A structure [PDB:1FFR] and hevamine [PDB:1HVQ].

| | 1FFR | 1HVQ | STRP | |
|----------------------------|--------|------|------|------|
| Active site | D313 | D125 | D169 | |
| | E315 | E127 | E171 | |
| | F/Y390 | Y183 | Y251 | |
| | D311 | D123 | D167 | |
| Substrate binding subsites | | | | |
| | -5 | Y170 | - | - |
| | -4 | R172 | - | - |
| | -3 | W167 | - | W58 |
| | | T276 | I82 | A136 |
| | | E473 | - | - |
| | -2 | W275 | G81 | A135 |
| | | T276 | I82 | A136 |
| | | E473 | - | - |
| | | W539 | W255 | W333 |
| | | E540 | S256 | S334 |
| | -1 | Y163 | Y6 | Y54 |
| | | W275 | G81 | A135 |
| | | D313 | D125 | D169 |
| | | E315 | E127 | E171 |
| | | A362 | A156 | A210 |
| | | M388 | Q181 | Q249 |
| F/Y390 | | Y183 | Y251 | |
| D391 | | N184 | N252 | |
| Y444 | | - | - | |
| R446 | | - | - | |
| W539 | W255 | W333 | | |
| +1 | W275 | G81 | A135 | |
| | E315 | E127 | E171 | |
| | F316 | - | - | |
| | M388 | Q181 | Q249 | |
| | D391 | N184 | N252 | |
| | R446 | - | - | |
| +2 | W275 | G81 | A135 | |
| | K369 | - | Y215 | |
| | D391 | N184 | N252 | |
| | F396 | - | - | |
| | Y418 | - | Y256 | |