|  |  |  |
| --- | --- | --- |
| **Glycoside Hydrolases (GHs)** |  |  |
|  |  |  |
| **GHs** | ***G. boninense*** | ***G. luciduma*** |
| **GH1** | 5 | 3 |
| **GH2** | 4 | 3 |
| **GH3** | 18 | 12 |
| **GH4** | 1 |  |
| **GH5** | 28 | 19 |
| **GH6** | 1 | 1 |
| **GH7** | 4 | 3 |
| **GH9** | 1 | 2 |
| **GH10** | 13 | 7 |
| **GH12** | 7 | 3 |
| **GH13** | 12 | 9 |
| **GH15** | 5 | 3 |
| **GH16** | 37 | 36 |
| **GH17** | 1 | 3 |
| **GH18** | 40 | 40 |
| **GH20** | 7 | 6 |
| **GH23** | 1 | 1 |
| **GH25** | 3 | 2 |
| **GH27** | 3 | 6 |
| **GH28** | 12 | 13 |
| **GH30** | 2 | 2 |
| **GH31** | 6 | 6 |
| **GH32** | 1 | 1 |
| **GH35** | 6 | 10 |
| **GH37** | 3 | 2 |
| **GH38** | 1 | 1 |
| **GH43** | 19 | 11 |
| **GH45** |  | 2 |
| **GH47** | 11 | 10 |
| **GH51** | 3 | 2 |
| **GH53** | 1 | 1 |
| **GH55** | 3 | 3 |
| **GH63** | 1 |  |
| **GH71** | 7 | 6 |
| **GH72** | 1 | 1 |
| **GH74** | 3 | 1 |
| **GH76** | 3 | 2 |
| **GH78** | 5 | 5 |
| **GH79** | 14 | 11 |
| **GH85** | 3 | 1 |
| **GH88** | 2 | 1 |
| **GH89** | 4 | 1 |
| **GH92** | 7 | 6 |
| **GH93** | 2 | 2 |
| **GH95** | 3 | 1 |
| **GH105** | 5 | 1 |
| **GH109** | 8 |  |
| **GH115** | 5 | 4 |
| **GH125** | 1 | 1 |
| **GH128** | 8 | 6 |
| **GH131** | 4 |  |
| **GH135** | 2 |  |
| **GH145** | 1 |  |
| **Total GH** | **348** | **273** |
|  |  |  |
|  |  |  |
| **Carbohydrate Esterases (CEs)** |  |  |
|  |  |  |
| CEs | ***G. boninense*** | ***G. luciduma*** |
| **CE1** | 13 | 3 |
| **CE2** | 2 |  |
| **CE4** | 6 | 3 |
| **CE8** | 3 | 3 |
| **CE9** | 2 | 1 |
| **CE10** | 46 |  |
| **CE12** | 4 | 1 |
| **CE14** | 1 |  |
| **CE15** | 1 | 2 |
| **CE16** | 24 | 17 |
| **Total CE** | **102** | **30** |
|  |  |  |
|  |  |  |
| **Polysaccharide Lyases (PLs)** |  |  |
|  |  |  |
| **PLs** | ***G. boninense*** | ***G. luciduma*** |
| **PL8** | 3 | 4 |
| **PL12** | 1 |  |
| **PL14** | 10 | 6 |
| **PL15** | 1 |  |
| **Total PL** | **15** | **10** |
|  |  |  |
|  |  |  |
| **Auxiliary Activities (AAs)** |  |  |
|  |  |  |
| **AAs** | ***G. boninense*** | ***G. luciduma*** |
| **AA1** | 22 | 13 |
| **AA2** | 21 | 8 |
| **AA3** | 53 | 5 |
| **AA4** | 2 |  |
| **AA5** | 12 | 9 |
| **AA6** | 2 | 1 |
| **AA7** | 11 |  |
| **AA8** | 2 | 2 |
| **AA9** | 20 | 15 |
| **Total AA** | **145** | **53** |
|  |  |  |
|  |  |  |
| **Carbohydrate-Binding Modules (CBMs)** | |  |
|  |  |  |
| **CBMs** | ***G. boninense*** | ***G. luciduma*** |
| **CBM1** | 18 | 14 |
| **CBM5** | 8 | 10 |
| **CBM12** | 3 | 1 |
| **CBM13** | 10 | 9 |
| **CBM18** |  | 2 |
| **CBM19** | 4 |  |
| **CBM20** | 5 | 3 |
| **CBM21** | 2 | 2 |
| **CBM32** | 1 |  |
| **CBM35** | 1 |  |
| **CBM43** | 1 | 1 |
| **CBM48** | 2 | 3 |
| **CBM50** | 12 | 8 |
| **Total CBM** | **67** | **53** |
|  |  |  |
|  |  |  |
| **Glycosyltransferases (GTs)** |  |  |
|  |  |  |
| **GTs** | ***G. boninense*** | ***G. luciduma*** |
| **GT1** | 12 | 10 |
| **GT2** | 11 | 12 |
| **GT3** | 1 | 1 |
| **GT4** | 5 | 4 |
| **GT5** |  | 1 |
| **GT8** | 7 | 6 |
| **GT15** | 5 | 3 |
| **GT17** | 1 | 2 |
| **GT20** | 4 | 3 |
| **GT21** | 1 | 1 |
| **GT22** | 2 | 3 |
| **GT24** | 1 | 1 |
| **GT25** |  |  |
| **GT31** |  | 1 |
| **GT32** | 4 | 1 |
| **GT33** | 1 | 1 |
| **GT35** | 2 | 1 |
| **GT39** | 3 | 3 |
| **GT41** | 1 |  |
| **GT48** | 3 | 4 |
| **GT49** | 1 | 1 |
| **GT50** | 1 | 1 |
| **GT57** | 2 | 2 |
| **GT58** | 1 | 1 |
| **GT59** | 1 | 1 |
| **GT65** | 2 |  |
| **GT66** | 1 | 1 |
| **GT69** | 3 | 2 |
| **GT76** | 1 | 2 |
| **GT90** | 1 | 1 |
| **Total GT** | **86** | **70** |

aCAZymes information of *G. lucidum* was obtained from Chen et al., 2012 whereby GH61 genes were now categorized into AA9 family.

**Reference**

Chen S, Xu J, Liu C, Zhu Y, Nelson DR, Zhou S, Li C, Wang L, Guo X, Sun Y, Luo H, Li Y, Song J, Henrissat B, Levasseur A, Qian J, Li J, Luo X, Shi L, He L, Xiang L, Xu X, Niu Y, Li Q, Han M V, Yan H, Zhang J, Chen H, Lv A, Wang Z, Liu M, Schwartz DC, Sun C. 2012. Genome sequence of the model medicinal mushroom *Ganoderma lucidum*. Nature Communications 3:913