

Supplementary Table 1: Functional categorization of syntenic genes of five *Brassicaceae* crops. The unigene sequences of the five *Brassicaceae* species were matched with *Arabidopsis* gene sequence database at local BLAST server using BLASTN. The annotated genes were classified into 25 different functional categories based on their homology to known proteins. The predominant functional category of unigenes was metabolism and energy followed by structural/catalytic protein. Most of the unigenes of all the species were hypothetical in nature.

| Function | <i>B.juncea</i> | <i>B.napus</i> | <i>B.oleracea</i> | <i>B.rapa</i> | <i>R. sativus</i> |
|---|-----------------|----------------|-------------------|---------------|-------------------|
| Metabolism and Energy | 60 | 1263 | 1895 | 1643 | 20 |
| Storage Protein | 1 | 36 | 119 | 25 | 1 |
| Cell cycle and DNA processing | 1 | 14 | 29 | 12 | - |
| Transcription factor | 1 | 86 | 198 | 188 | - |
| Protein Synthesis | 3 | 47 | 133 | 80 | 5 |
| Protein fold/modifications | - | 71 | 119 | 51 | 1 |
| Structural/catalytic protein | 16 | 601 | 1315 | 1222 | 11 |
| Protein Activity Regulation | 8 | 156 | 159 | 231 | 5 |
| Cellular Transport | 5 | 197 | 343 | 294 | 4 |
| Cellular Communication | - | 32 | 56 | 44 | - |
| Cell Rescue, Defense and Virulence | 6 | 177 | 209 | 139 | 2 |
| Interaction with the Cellular Environment | 1 | 13 | 39 | 22 | - |
| Interaction with the Environment (systemic) | - | 7 | 11 | 15 | - |
| Transposable elements, Plasmid Proteins | - | 2 | 9 | 2 | - |
| Leucine zipper | 1 | 4 | 5 | 6 | - |
| Developmental (Systemic) | 1 | 49 | 33 | 28 | 1 |
| Biogenesis of cellular Components | 1 | 28 | 138 | 52 | 2 |
| Cell Differentiation | - | 18 | 116 | 8 | - |
| Organ Differentiation | - | 4 | 5 | 2 | - |
| Subcellular Differentiation | - | 7 | 5 | 8 | - |
| Cell Localization | 11 | 466 | 295 | 313 | 20 |
| Organ Localization | - | 7 | 29 | 5 | - |
| Ubiquitous Expression | 1 | 59 | 73 | 68 | - |
| Nuclear Protein | - | 97 | 82 | 59 | - |
| Hypothetical proteins | 23 | 1045 | 1874 | 1177 | 6 |
| TOTAL | 140 | 4486 | 7289 | 5694 | 78 |