**Genome Wide Identification, Classification and Functional Characterization Analysis of IQD gene family in Diploid and Tetraploid Cotton (*Gossypium*)**

Abdul Rehman1,2,3, Zhen Peng2, Hongge Li2, Guangyong Qin1, Yinhua Jia2，Zhaoe Pan2，Shoupu He1,2, Abdul Qayyum3 and Xiongming Du1,2\*,

1Zhengzhou Research Base, State Key Laboratory of Cotton Biology, Zhengzhou University, Zhengzhou 450000, China.

2State Key Laboratory of Cotton Biology, Institute of Cotton Research Chinese Academy of Agricultural Science, Anyang, 455000, Henan, China.

3Department of Plant Breeding and Genetics, Bahauddin Zakariya university, Multan-66000, Pakistan.

**\*Corresponding Author:** [duxiongming@caas.cn](mailto:duxiongming@caas.cn),

A picture containing diagram

Description automatically generated

**Supplementary Fig. 7a. Cluttering of orthologous genes analysis between *G. arboreum*, *G. raimondii*, *G. barbadense* and *G. hirsutum***

A picture containing graphical user interface

Description automatically generated

**Supplementary Fig. 7b. Cluttering of orthologous genes analysis between *G. arboreum, G. barbadense* and *G. hirsutum***

A picture containing graphical user interface

Description automatically generated

**Supplementary Fig. 7c. Cluttering of orthologous genes analysis between *G. barbadense, G. hirsutum* Graphical user interface

Description automatically generatedand *G. raimondii***

**Supplementary Fig. 7d. Cluttering of orthologous genes analysis between *G. arboreum* and *G. barbadense***

Graphical user interface

Description automatically generated

**Supplementary Fig. 7e. Cluttering of orthologous genes analysis between *G. arboreum* and *G. hirsutum***

***Graphical user interface

Description automatically generated***

**Supplementary Fig. 7f. Cluttering of orthologous genes analysis between *G. arboreum* and *G. raimondii***

**Graphical user interface, application

Description automatically generated**

**Supplementary Fig. 7g. Cluttering of orthologous genes analysis between *G. hirsutum* and *G. barbadense***

Graphical user interface

Description automatically generated

**Supplementary Fig. 7h. Cluttering of orthologous genes analysis between *G. raimondii* and *G. barbadense***

Graphical user interface

Description automatically generated

**Supplementary Fig. 7i. Cluttering of orthologous genes analysis between *G. hirsutum* and *G. raimondii***