

## Supplementary data

**Genome-wide analysis of IQ67 domain (IQD) gene families in *Brachypodium distachyon*****Ertugrul Filiz\*, Huseyin Tombuloglu, Ibrahim Ilker Ozyigit****Supplementary Table 1.** The properties of

IQD proteins

Protein: Bradi4g01360.2

Length = 435 amino acids

Molecular Weight = 47579,82 Daltons

Amino Acid Number Mol%

Ala A 48 11,03

Cys C 3 0,69

Asp D 14 3,22

Glu E 33 7,59

Phe F 2 0,46

Gly G 24 5,52

His H 14 3,22

Ile I 16 3,68

Lys K 37 8,51

Leu L 32 7,36

Met M 7 1,61

Asn N 22 5,06

Pro P 19 4,37

Gln Q 29 6,67

Arg R 32 7,36

Ser S 51 11,72

Thr T 22 5,06

Val V 23 5,29

Trp W 6 1,38

Tyr Y 1 0,23

Protein: Bradi2g05680.1

Length = 493 amino acids

Molecular Weight = 52905,49 Daltons

Amino Acid Number Mol%

Ala A 82 16,63

Cys C 5 1,01

Asp D 15 3,04

Glu E 26 5,27

Phe F 9 1,83

Gly G 35 7,10

His H 5 1,01

Ile I 6 1,22

Lys K 23 4,67

Leu L 33 6,69

Met M 6 1,22

Asn N 12 2,43

Pro P 35 7,10

Gln Q 19 3,85

Arg R 52 10,55

|       |    |       |
|-------|----|-------|
| Ser S | 53 | 10,75 |
| Thr T | 21 | 4,26  |
| Val V | 31 | 6,29  |
| Trp W | 4  | 0,81  |
| Tyr Y | 21 | 4,26  |

|       |    |       |
|-------|----|-------|
| Ser S | 46 | 10,48 |
| Thr T | 21 | 4,78  |
| Val V | 30 | 6,83  |
| Trp W | 10 | 2,28  |
| Tyr Y | 3  | 0,68  |

Protein: Bradi2g05840.1

Length = 439 amino acids

Molecular Weight = 48461,81 Daltons

Amino Acid Number Mol%

|       |    |       |
|-------|----|-------|
| Ala A | 47 | 10,71 |
| Cys C | 8  | 1,82  |
| Asp D | 17 | 3,87  |
| Glu E | 22 | 5,01  |
| Phe F | 9  | 2,05  |
| Gly G | 29 | 6,61  |
| His H | 8  | 1,82  |
| Ile I | 12 | 2,73  |
| Lys K | 37 | 8,43  |
| Leu L | 34 | 7,74  |
| Met M | 9  | 2,05  |
| Asn N | 16 | 3,64  |
| Pro P | 18 | 4,10  |
| Gln Q | 21 | 4,78  |
| Arg R | 42 | 9,57  |

Protein: Bradi1g06350.1

Length = 415 amino acids

Molecular Weight = 46354,94 Daltons

Amino Acid Number Mol%

|       |    |      |
|-------|----|------|
| Ala A | 41 | 9,88 |
| Cys C | 6  | 1,45 |
| Asp D | 22 | 5,30 |
| Glu E | 27 | 6,51 |
| Phe F | 9  | 2,17 |
| Gly G | 29 | 6,99 |
| His H | 10 | 2,41 |
| Ile I | 15 | 3,61 |
| Lys K | 27 | 6,51 |
| Leu L | 34 | 8,19 |
| Met M | 6  | 1,45 |
| Asn N | 14 | 3,37 |
| Pro P | 18 | 4,34 |
| Gln Q | 28 | 6,75 |
| Arg R | 37 | 8,92 |

|       |    |      |
|-------|----|------|
| Ser S | 34 | 8,19 |
| Thr T | 16 | 3,86 |
| Val V | 27 | 6,51 |
| Trp W | 10 | 2,41 |
| Tyr Y | 5  | 1,20 |

|       |    |       |
|-------|----|-------|
| Ser S | 46 | 10,98 |
| Thr T | 25 | 5,97  |
| Val V | 28 | 6,68  |
| Trp W | 6  | 1,43  |
| Tyr Y | 2  | 0,48  |

Protein: Bradi1g13650.3

Length = 419 amino acids

Molecular Weight = 46289,48 Daltons

| Amino Acid | Number | Mol% |
|------------|--------|------|
|------------|--------|------|

|       |    |      |
|-------|----|------|
| Ala A | 35 | 8,35 |
| Cys C | 4  | 0,95 |
| Asp D | 13 | 3,10 |
| Glu E | 34 | 8,11 |
| Phe F | 5  | 1,19 |
| Gly G | 26 | 6,21 |
| His H | 14 | 3,34 |
| Ile I | 16 | 3,82 |
| Lys K | 31 | 7,40 |
| Leu L | 34 | 8,11 |
| Met M | 6  | 1,43 |
| Asn N | 26 | 6,21 |
| Pro P | 12 | 2,86 |
| Gln Q | 25 | 5,97 |
| Arg R | 31 | 7,40 |

Protein: Bradi3g13710.1

Length = 583 amino acids

Molecular Weight = 63218,16 Daltons

| Amino Acid | Number | Mol% |
|------------|--------|------|
|------------|--------|------|

|       |    |       |
|-------|----|-------|
| Ala A | 89 | 15,27 |
| Cys C | 3  | 0,51  |
| Asp D | 26 | 4,46  |
| Glu E | 23 | 3,95  |
| Phe F | 13 | 2,23  |
| Gly G | 34 | 5,83  |
| His H | 18 | 3,09  |
| Ile I | 6  | 1,03  |
| Lys K | 20 | 3,43  |
| Leu L | 29 | 4,97  |
| Met M | 11 | 1,89  |
| Asn N | 14 | 2,40  |
| Pro P | 38 | 6,52  |
| Gln Q | 34 | 5,83  |
| Arg R | 67 | 11,49 |

|       |    |       |
|-------|----|-------|
| Ser S | 86 | 14,75 |
| Thr T | 27 | 4,63  |
| Val V | 24 | 4,12  |
| Trp W | 8  | 1,37  |
| Tyr Y | 13 | 2,23  |

|       |    |       |
|-------|----|-------|
| Ser S | 57 | 12,31 |
| Thr T | 25 | 5,40  |
| Val V | 24 | 5,18  |
| Trp W | 5  | 1,08  |
| Tyr Y | 12 | 2,59  |

Protein: Bradi1g14090.1

Length = 463 amino acids

Molecular Weight = 49570,92 Daltons

| Amino Acid | Number | Mol% |
|------------|--------|------|
|------------|--------|------|

|       |    |       |
|-------|----|-------|
| Ala A | 71 | 15,33 |
| Cys C | 9  | 1,94  |
| Asp D | 15 | 3,24  |
| Glu E | 18 | 3,89  |
| Phe F | 8  | 1,73  |
| Gly G | 31 | 6,70  |
| His H | 11 | 2,38  |
| Ile I | 8  | 1,73  |
| Lys K | 20 | 4,32  |
| Leu L | 29 | 6,26  |
| Met M | 7  | 1,51  |
| Asn N | 9  | 1,94  |
| Pro P | 33 | 7,13  |
| Gln Q | 24 | 5,18  |
| Arg R | 47 | 10,15 |

Protein: Bradi2g18220.1

Length = 435 amino acids

Molecular Weight = 46934,27 Daltons

| Amino Acid | Number | Mol% |
|------------|--------|------|
|------------|--------|------|

|       |    |       |
|-------|----|-------|
| Ala A | 53 | 12,18 |
| Cys C | 6  | 1,38  |
| Asp D | 19 | 4,37  |
| Glu E | 20 | 4,60  |
| Phe F | 6  | 1,38  |
| Gly G | 35 | 8,05  |
| His H | 5  | 1,15  |
| Ile I | 6  | 1,38  |
| Lys K | 17 | 3,91  |
| Leu L | 34 | 7,82  |
| Met M | 16 | 3,68  |
| Asn N | 13 | 2,99  |
| Pro P | 19 | 4,37  |
| Gln Q | 14 | 3,22  |
| Arg R | 52 | 11,95 |

|       |    |       |
|-------|----|-------|
| Ser S | 64 | 14,71 |
| Thr T | 16 | 3,68  |
| Val V | 27 | 6,21  |
| Trp W | 7  | 1,61  |
| Tyr Y | 6  | 1,38  |

|       |    |       |
|-------|----|-------|
| Ser S | 65 | 11,28 |
| Thr T | 32 | 5,56  |
| Val V | 43 | 7,47  |
| Trp W | 8  | 1,39  |
| Tyr Y | 12 | 2,08  |

Protein: Bradi2g18640.2

Length = 576 amino acids

Molecular Weight = 63928,58 Daltons

| Amino Acid | Number | Mol% |
|------------|--------|------|
|------------|--------|------|

|       |    |      |
|-------|----|------|
| Ala A | 55 | 9,55 |
| Cys C | 0  | 0,00 |
| Asp D | 24 | 4,17 |
| Glu E | 45 | 7,81 |
| Phe F | 12 | 2,08 |
| Gly G | 24 | 4,17 |
| His H | 6  | 1,04 |
| Ile I | 14 | 2,43 |
| Lys K | 46 | 7,99 |
| Leu L | 41 | 7,12 |
| Met M | 11 | 1,91 |
| Asn N | 26 | 4,51 |
| Pro P | 42 | 7,29 |
| Gln Q | 24 | 4,17 |
| Arg R | 46 | 7,99 |

Protein: Bradi5g18767.1

Length = 451 amino acids

Molecular Weight = 48832,26 Daltons

| Amino Acid | Number | Mol% |
|------------|--------|------|
|------------|--------|------|

|       |    |       |
|-------|----|-------|
| Ala A | 66 | 14,63 |
| Cys C | 5  | 1,11  |
| Asp D | 14 | 3,10  |
| Glu E | 24 | 5,32  |
| Phe F | 12 | 2,66  |
| Gly G | 40 | 8,87  |
| His H | 7  | 1,55  |
| Ile I | 5  | 1,11  |
| Lys K | 26 | 5,76  |
| Leu L | 23 | 5,10  |
| Met M | 9  | 2,00  |
| Asn N | 10 | 2,22  |
| Pro P | 36 | 7,98  |
| Gln Q | 21 | 4,66  |
| Arg R | 50 | 11,09 |

|       |    |      |
|-------|----|------|
| Ser S | 44 | 9,76 |
| Thr T | 19 | 4,21 |
| Val V | 21 | 4,66 |
| Trp W | 6  | 1,33 |
| Tyr Y | 13 | 2,88 |

|       |    |       |
|-------|----|-------|
| Ser S | 44 | 11,96 |
| Thr T | 14 | 3,80  |
| Val V | 20 | 5,43  |
| Trp W | 3  | 0,82  |
| Tyr Y | 7  | 1,90  |

Protein: Bradi2g19410.1

Length = 368 amino acids

Molecular Weight = 40378,97 Daltons

Protein: Bradi3g26990.1

Length = 476 amino acids

Molecular Weight = 51513,91 Daltons

Amino Acid Number Mol%

|       |    |       |
|-------|----|-------|
| Ala A | 40 | 10,87 |
| Cys C | 8  | 2,17  |
| Asp D | 11 | 2,99  |
| Glu E | 20 | 5,43  |
| Phe F | 7  | 1,90  |
| Gly G | 26 | 7,07  |
| His H | 6  | 1,63  |
| Ile I | 10 | 2,72  |
| Lys K | 20 | 5,43  |
| Leu L | 26 | 7,07  |
| Met M | 11 | 2,99  |
| Asn N | 5  | 1,36  |
| Pro P | 27 | 7,34  |
| Gln Q | 19 | 5,16  |
| Arg R | 44 | 11,96 |

Amino Acid Number Mol%

|       |    |       |
|-------|----|-------|
| Ala A | 76 | 15,97 |
| Cys C | 6  | 1,26  |
| Asp D | 18 | 3,78  |
| Glu E | 28 | 5,88  |
| Phe F | 11 | 2,31  |
| Gly G | 28 | 5,88  |
| His H | 8  | 1,68  |
| Ile I | 6  | 1,26  |
| Lys K | 20 | 4,20  |
| Leu L | 32 | 6,72  |
| Met M | 10 | 2,10  |
| Asn N | 5  | 1,05  |
| Pro P | 34 | 7,14  |
| Gln Q | 19 | 3,99  |
| Arg R | 53 | 11,13 |

|       |    |       |
|-------|----|-------|
| Ser S | 60 | 12,61 |
| Thr T | 19 | 3,99  |
| Val V | 24 | 5,04  |
| Trp W | 4  | 0,84  |
| Tyr Y | 15 | 3,15  |

|       |    |       |
|-------|----|-------|
| Ser S | 49 | 10,38 |
| Thr T | 19 | 4,03  |
| Val V | 26 | 5,51  |
| Trp W | 6  | 1,27  |
| Tyr Y | 12 | 2,54  |

Protein: Bradi2g33370.1

Length = 472 amino acids

Molecular Weight = 50727,16 Daltons

Protein: Bradi1g36140.1

Length = 436 amino acids

Molecular Weight = 46562,46 Daltons

Amino Acid Number Mol%

|       |    |       |
|-------|----|-------|
| Ala A | 89 | 18,86 |
| Cys C | 7  | 1,48  |
| Asp D | 13 | 2,75  |
| Glu E | 20 | 4,24  |
| Phe F | 11 | 2,33  |
| Gly G | 26 | 5,51  |
| His H | 11 | 2,33  |
| Ile I | 8  | 1,69  |
| Lys K | 20 | 4,24  |
| Leu L | 26 | 5,51  |
| Met M | 9  | 1,91  |
| Asn N | 20 | 4,24  |
| Pro P | 29 | 6,14  |
| Gln Q | 23 | 4,87  |
| Arg R | 48 | 10,17 |

Amino Acid Number Mol%

|       |    |       |
|-------|----|-------|
| Ala A | 51 | 11,70 |
| Cys C | 10 | 2,29  |
| Asp D | 30 | 6,88  |
| Glu E | 32 | 7,34  |
| Phe F | 6  | 1,38  |
| Gly G | 46 | 10,55 |
| His H | 7  | 1,61  |
| Ile I | 3  | 0,69  |
| Lys K | 14 | 3,21  |
| Leu L | 25 | 5,73  |
| Met M | 10 | 2,29  |
| Asn N | 8  | 1,83  |
| Pro P | 17 | 3,90  |
| Gln Q | 25 | 5,73  |
| Arg R | 46 | 10,55 |

|       |    |       |
|-------|----|-------|
| Ser S | 52 | 11,93 |
| Thr T | 20 | 4,59  |
| Val V | 25 | 5,73  |
| Trp W | 5  | 1,15  |
| Tyr Y | 4  | 0,92  |

|       |    |       |
|-------|----|-------|
| Ser S | 65 | 13,71 |
| Thr T | 23 | 4,85  |
| Val V | 33 | 6,96  |
| Trp W | 8  | 1,69  |
| Tyr Y | 3  | 0,63  |

Protein: Bradi2g37980.2

Length = 474 amino acids

Molecular Weight = 51819,71 Daltons

| Amino Acid | Number | Mol% |
|------------|--------|------|
|------------|--------|------|

|       |    |      |
|-------|----|------|
| Ala A | 46 | 9,70 |
| Cys C | 1  | 0,21 |
| Asp D | 16 | 3,38 |
| Glu E | 33 | 6,96 |
| Phe F | 8  | 1,69 |
| Gly G | 22 | 4,64 |
| His H | 7  | 1,48 |
| Ile I | 13 | 2,74 |
| Lys K | 38 | 8,02 |
| Leu L | 36 | 7,59 |
| Met M | 7  | 1,48 |
| Asn N | 16 | 3,38 |
| Pro P | 39 | 8,23 |
| Gln Q | 22 | 4,64 |
| Arg R | 38 | 8,02 |

Protein: Bradi2g47867.1

Length = 426 amino acids

Molecular Weight = 46425,56 Daltons

| Amino Acid | Number | Mol% |
|------------|--------|------|
|------------|--------|------|

|       |    |       |
|-------|----|-------|
| Ala A | 43 | 10,09 |
| Cys C | 6  | 1,41  |
| Asp D | 20 | 4,69  |
| Glu E | 19 | 4,46  |
| Phe F | 7  | 1,64  |
| Gly G | 34 | 7,98  |
| His H | 10 | 2,35  |
| Ile I | 9  | 2,11  |
| Lys K | 24 | 5,63  |
| Leu L | 26 | 6,10  |
| Met M | 8  | 1,88  |
| Asn N | 13 | 3,05  |
| Pro P | 16 | 3,76  |
| Gln Q | 18 | 4,23  |
| Arg R | 47 | 11,03 |



|       |    |       |
|-------|----|-------|
| Ser S | 57 | 13,38 |
| Thr T | 24 | 5,63  |
| Val V | 32 | 7,51  |
| Trp W | 8  | 1,88  |
| Tyr Y | 5  | 1,17  |

|       |    |       |
|-------|----|-------|
| Ser S | 67 | 12,09 |
| Thr T | 21 | 3,79  |
| Val V | 36 | 6,50  |
| Trp W | 7  | 1,26  |
| Tyr Y | 9  | 1,62  |

Protein: Bradi2g48210.2

Length = 554 amino acids

Molecular Weight = 60777,49 Daltons

Amino Acid Number Mol%

|       |    |       |
|-------|----|-------|
| Ala A | 59 | 10,65 |
| Cys C | 2  | 0,36  |
| Asp D | 26 | 4,69  |
| Glu E | 31 | 5,60  |
| Phe F | 13 | 2,35  |
| Gly G | 24 | 4,33  |
| His H | 7  | 1,26  |
| Ile I | 18 | 3,25  |
| Lys K | 51 | 9,21  |
| Leu L | 44 | 7,94  |
| Met M | 11 | 1,99  |
| Asn N | 35 | 6,32  |
| Pro P | 36 | 6,50  |
| Gln Q | 20 | 3,61  |
| Arg R | 37 | 6,68  |

Protein: Bradi1g49070.2

Length = 340 amino acids

Molecular Weight = 38392,68 Daltons

Amino Acid Number Mol%

|       |    |       |
|-------|----|-------|
| Ala A | 32 | 9,41  |
| Cys C | 1  | 0,29  |
| Asp D | 12 | 3,53  |
| Glu E | 16 | 4,71  |
| Phe F | 5  | 1,47  |
| Gly G | 18 | 5,29  |
| His H | 4  | 1,18  |
| Ile I | 11 | 3,24  |
| Lys K | 44 | 12,94 |
| Leu L | 17 | 5,00  |
| Met M | 7  | 2,06  |
| Asn N | 22 | 6,47  |
| Pro P | 27 | 7,94  |
| Gln Q | 25 | 7,35  |
| Arg R | 28 | 8,24  |

|       |    |      |
|-------|----|------|
| Ser S | 32 | 9,41 |
| Thr T | 13 | 3,82 |
| Val V | 12 | 3,53 |
| Trp W | 10 | 2,94 |
| Tyr Y | 4  | 1,18 |

|       |    |      |
|-------|----|------|
| Ser S | 35 | 8,97 |
| Thr T | 27 | 6,92 |
| Val V | 18 | 4,62 |
| Trp W | 3  | 0,77 |
| Tyr Y | 11 | 2,82 |

Protein: Bradi2g49490.1

Length = 390 amino acids

Molecular Weight = 43402,84 Daltons

Protein: Bradi2g54170.2

Length = 492 amino acids

Molecular Weight = 54967,33 Daltons

Amino Acid Number Mol%

|       |    |       |
|-------|----|-------|
| Ala A | 42 | 10,77 |
| Cys C | 8  | 2,05  |
| Asp D | 18 | 4,62  |
| Glu E | 18 | 4,62  |
| Phe F | 6  | 1,54  |
| Gly G | 31 | 7,95  |
| His H | 14 | 3,59  |
| Ile I | 7  | 1,79  |
| Lys K | 19 | 4,87  |
| Leu L | 31 | 7,95  |
| Met M | 9  | 2,31  |
| Asn N | 3  | 0,77  |
| Pro P | 17 | 4,36  |
| Gln Q | 22 | 5,64  |
| Arg R | 51 | 13,08 |

Amino Acid Number Mol%

|       |    |       |
|-------|----|-------|
| Ala A | 52 | 10,57 |
| Cys C | 2  | 0,41  |
| Asp D | 21 | 4,27  |
| Glu E | 29 | 5,89  |
| Phe F | 11 | 2,24  |
| Gly G | 14 | 2,85  |
| His H | 11 | 2,24  |
| Ile I | 14 | 2,85  |
| Lys K | 42 | 8,54  |
| Leu L | 30 | 6,10  |
| Met M | 9  | 1,83  |
| Asn N | 9  | 1,83  |
| Pro P | 42 | 8,54  |
| Gln Q | 26 | 5,28  |
| Arg R | 43 | 8,74  |

|       |    |       |
|-------|----|-------|
| Ser S | 58 | 11,79 |
| Thr T | 33 | 6,71  |
| Val V | 29 | 5,89  |
| Trp W | 10 | 2,03  |
| Tyr Y | 7  | 1,42  |

|       |    |      |
|-------|----|------|
| Ser S | 56 | 9,71 |
| Thr T | 32 | 5,55 |
| Val V | 28 | 4,85 |
| Trp W | 11 | 1,91 |
| Tyr Y | 14 | 2,43 |

Protein: Bradi2g57567.1

Length = 577 amino acids

Molecular Weight = 63419,87 Daltons

Amino Acid Number Mol%

|       |    |       |
|-------|----|-------|
| Ala A | 86 | 14,90 |
| Cys C | 3  | 0,52  |
| Asp D | 19 | 3,29  |
| Glu E | 24 | 4,16  |
| Phe F | 9  | 1,56  |
| Gly G | 40 | 6,93  |
| His H | 15 | 2,60  |
| Ile I | 17 | 2,95  |
| Lys K | 15 | 2,60  |
| Leu L | 26 | 4,51  |
| Met M | 12 | 2,08  |
| Asn N | 4  | 0,69  |
| Pro P | 49 | 8,49  |
| Gln Q | 37 | 6,41  |
| Arg R | 80 | 13,86 |

Protein: Bradi1g62220.1

Length = 491 amino acids

Molecular Weight = 54217,27 Daltons

Amino Acid Number Mol%

|       |    |       |
|-------|----|-------|
| Ala A | 72 | 14,66 |
| Cys C | 5  | 1,02  |
| Asp D | 25 | 5,09  |
| Glu E | 27 | 5,50  |
| Phe F | 13 | 2,65  |
| Gly G | 27 | 5,50  |
| His H | 12 | 2,44  |
| Ile I | 10 | 2,04  |
| Lys K | 24 | 4,89  |
| Leu L | 31 | 6,31  |
| Met M | 13 | 2,65  |
| Asn N | 5  | 1,02  |
| Pro P | 37 | 7,54  |
| Gln Q | 30 | 6,11  |
| Arg R | 57 | 11,61 |

|       |    |      |
|-------|----|------|
| Ser S | 47 | 9,57 |
| Thr T | 16 | 3,26 |
| Val V | 25 | 5,09 |
| Trp W | 6  | 1,22 |
| Tyr Y | 9  | 1,83 |

|       |    |       |
|-------|----|-------|
| Ser S | 53 | 12,93 |
| Thr T | 20 | 4,88  |
| Val V | 22 | 5,37  |
| Trp W | 4  | 0,98  |
| Tyr Y | 6  | 1,46  |

Protein: Bradi1g74410.1

Length = 410 amino acids

Molecular Weight = 44494,73 Daltons

Amino Acid Number Mol%

|       |    |       |
|-------|----|-------|
| Ala A | 60 | 14,63 |
| Cys C | 5  | 1,22  |
| Asp D | 15 | 3,66  |
| Glu E | 16 | 3,90  |
| Phe F | 7  | 1,71  |
| Gly G | 22 | 5,37  |
| His H | 10 | 2,44  |
| Ile I | 6  | 1,46  |
| Lys K | 17 | 4,15  |
| Leu L | 27 | 6,59  |
| Met M | 10 | 2,44  |
| Asn N | 4  | 0,98  |
| Pro P | 30 | 7,32  |
| Gln Q | 27 | 6,59  |
| Arg R | 49 | 11,95 |