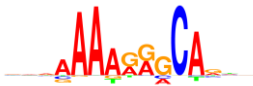
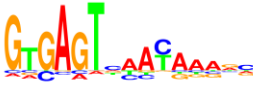
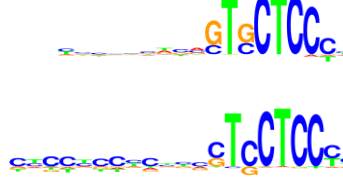
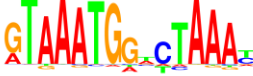
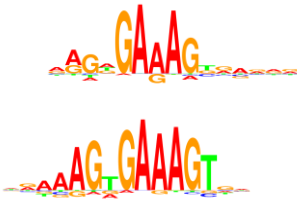
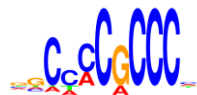
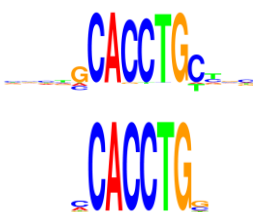
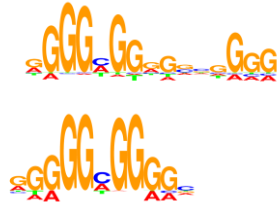
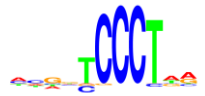
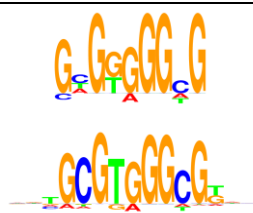
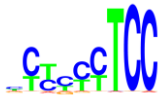
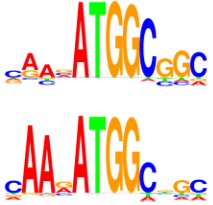


**Supplemental Table S2 (related to Figure 2): Proteins analyzed in this study, and motifs obtained using RCADE (Najafabadi et al., 2015b).** Table of all C2H2-ZF proteins used in this study, including information about auxiliary domains, number of zinc finger domains and evolutionary age (in million years). Motif logos generated using RCADE are displayed for all proteins and established motifs if available. The symbol "\*" marks C2H2-ZF proteins previously published in Najafabadi et al., 2015a.

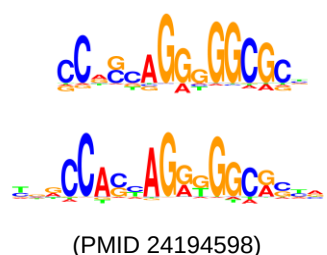
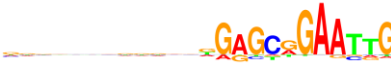
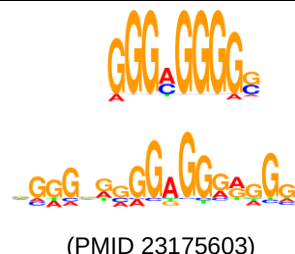
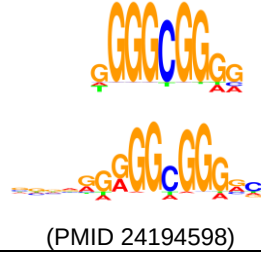
| Symbol  | UniProt ID | Effector Domains | Number of ZF domains | Evolutionary age (Mya) | ChIP-seq motif/<br>established motif                                                                     |
|---------|------------|------------------|----------------------|------------------------|----------------------------------------------------------------------------------------------------------|
| FEZF1   | A0PJY2     | none             | 6                    | 936                    |                       |
| ZNF320  | A2RRD8     | KRAB             | 11                   | 105                    |                       |
| ZSCAN5C | A6NGD5     | SCAN             | 5                    | 43.1                   |                       |
| ZNF98   | A6NK75     | KRAB             | 13                   | 97.5                   |                       |
| ZBTB42  | B2RXF5     | BTB              | 4                    | 429.6                  |                      |
| ZNF213  | O14771     | SCAN,KRAB        | 5                    | 179.2                  |                     |
| ZNF263  | O14978     | SCAN,KRAB        | 9                    | 320.5                  | <br>(PMID 22955619) |
| ZNF264* | O43296     | KRAB             | 13                   | 105                    |                     |
| ZBTB14  | O43829     | BTB              | 5                    | 429.6                  |                     |
| ZNF354A | O60765     | KRAB             | 13                   | 105                    |                     |
| ZNF324  | O75467     | KRAB             | 9                    | 105                    |                     |

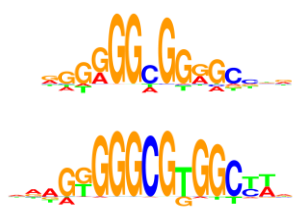
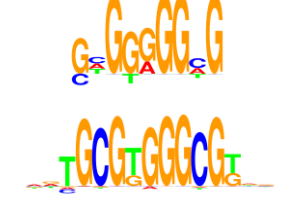
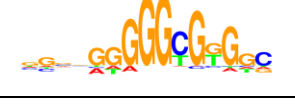
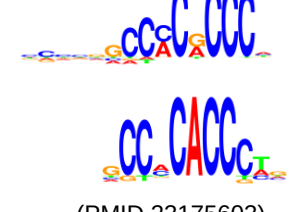
|          |        |      |    |       |                                                                                                          |
|----------|--------|------|----|-------|----------------------------------------------------------------------------------------------------------|
| PRDM1    | O75626 | SET  | 5  | 847   | <br>(PMID 22955619)   |
| ZNF189*  | O75820 | KRAB | 16 | 105   |                       |
| KLF7     | O75840 | none | 3  | 936   |                       |
| SNAI1    | O95863 | none | 4  | 936   | <br>(PMID 23175603)   |
| SP1      | P08047 | none | 3  | 936   | <br>(PMID 24194598)  |
| ZSCAN22* | P10073 | SCAN | 8  | 105   |                     |
| ZBTB48   | P10074 | BTB  | 11 | 355.7 |                     |
| GLI4     | P10075 | none | 7  | 163.7 |                     |
| EGR2     | P11161 | none | 3  | 936   | <br>(PMID 23332764) |

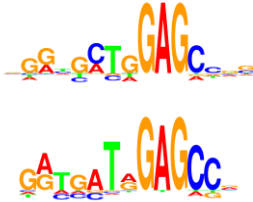
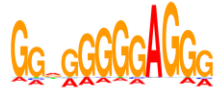
Supplemental Table S2 - ii

|         |        |           |    |       |                                                                                                                                                                                                   |
|---------|--------|-----------|----|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ZNF35*  | P13682 | none      | 11 | 105   |                                                                                                                 |
| ZNF250* | P15622 | KRAB      | 13 | 105   |                                                                                                                |
| ZNF708  | P17019 | none      | 15 | 320.5 |                                                                                                                |
| ZNF16*  | P17020 | none      | 15 | 163.7 |                                                                                                                |
| ZNF18   | P17022 | SCAN,KRAB | 5  | 105   |                                                                                                                |
| ZNF22   | P17026 | none      | 5  | 163.7 |                                                                                                                |
| ZNF37A  | P17032 | KRAB      | 10 | 320.5 |                                                                                                                |
| ZNF30   | P17039 | KRAB      | 16 | 105   |                                                                                                               |
| ZNF8    | P17098 | KRAB      | 7  | 105   |                                                                                                              |
| YY1*    | P25490 | none      | 4  | 936   | <br>(PMID 24194598)                                                                                          |
| MZF1*   | P28698 | SCAN      | 13 | 105   | <br><br>(PMID 24194598) |
| ZNF76   | P36508 | none      | 7  | 936   |                                                                                                              |

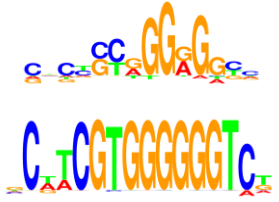
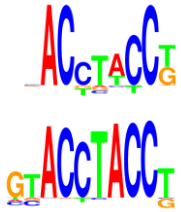
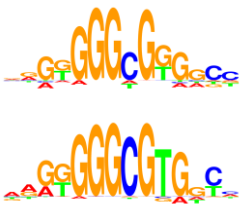
Supplemental Table S2 - iii

|         |        |      |    |       |                                                                                                          |
|---------|--------|------|----|-------|----------------------------------------------------------------------------------------------------------|
| CTCF*   | P49711 | none | 11 | 429.6 | <br>(PMID 24194598)   |
| ZNF41*  | P51814 | KRAB | 17 | 105   |                        |
| ZNF136* | P52737 | KRAB | 13 | 105   |                       |
| ZNF140  | P52738 | KRAB | 10 | 105   |                       |
| ZNF134  | P52741 | none | 10 | 97.5  |                       |
| MAZ     | P56270 | none | 5  | 429.6 | <br>(PMID 23175603)  |
| ZNF121  | P58317 | none | 9  | 90.9  |                     |
| ZNF280A | P59817 | none | 5  | 0     |                     |
| ZNF200* | P98182 | none | 5  | 105   |                     |
| SP2     | Q02086 | none | 3  | 936   | <br>(PMID 24194598) |
| ZNF45*  | Q02386 | KRAB | 15 | 105   |                     |

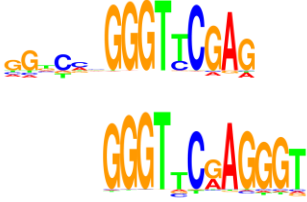
|         |        |      |    |      |                                                                                                          |
|---------|--------|------|----|------|----------------------------------------------------------------------------------------------------------|
| SP4     | Q02446 | none | 3  | 936  | <br>(PMID 23332764)   |
| ZNF85   | Q03923 | KRAB | 15 | 105  |                       |
| ZNF33A* | Q06730 | KRAB | 16 | 105  |                       |
| EGR3    | Q06889 | none | 3  | 936  | <br>(PMID 23175603)   |
| ZNF543  | Q08ER8 | KRAB | 13 | 105  |                      |
| ZNF415* | Q09FC8 | none | 11 | 6.6  |                     |
| ZNF816  | Q0VGE8 | KRAB | 15 | 105  |                     |
| KLF10*  | Q13118 | none | 3  | 936  |                     |
| KLF1    | Q13351 | none | 3  | 936  | <br>(PMID 23175603) |
| ZNF273* | Q14593 | KRAB | 10 | 97.5 |                     |
| ZNF146  | Q15072 | none | 10 | 105  |                     |

|         |        |           |    |       |                                                                                                        |
|---------|--------|-----------|----|-------|--------------------------------------------------------------------------------------------------------|
| ZBTB6   | Q15916 | BTB       | 4  | 320.5 | <br>(PMID 16381825) |
| ZNF528* | Q3MIS6 | KRAB      | 15 | 105   |                     |
| ZNF260  | Q3ZCT1 | none      | 13 | 105   |                     |
| ZNF394  | Q53GI3 | SCAN,KRAB | 6  | 163.7 |                     |
| ZNF667  | Q5HYK9 | KRAB      | 14 | 105   |                     |
| ZNF684* | Q5T5D7 | KRAB      | 8  | 105   |                     |
| ZNF770  | Q6IQ21 | none      | 10 | 105   |                   |
| ZNF774  | Q6NX45 | KRAB      | 12 | 163.7 |                   |
| ZNF549  | Q6P9A3 | KRAB      | 13 | 105   |                   |
| ZNF449  | Q6P9G9 | SCAN      | 7  | 105   |                   |
| ZNF322* | Q6U7Q0 | none      | 8  | 105   |                   |
| ZNF574* | Q6ZN55 | none      | 19 | 163.7 |                   |
| ZNF467* | Q7Z7K2 | none      | 12 | 163.7 |                   |

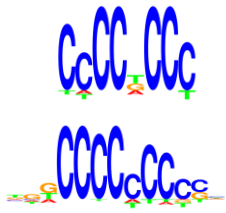
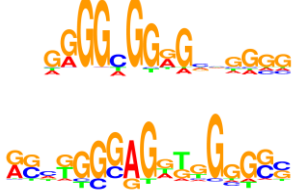
|         |        |      |    |       |  |
|---------|--------|------|----|-------|--|
| ZNF554  | Q86TJ5 | KRAB | 7  | 105   |  |
| ZNF329  | Q86UD4 | none | 12 | 105   |  |
| ZSCAN30 | Q86W11 | SCAN | 7  | 163.7 |  |
| ZNF677  | Q86XU0 | KRAB | 11 | 105   |  |
| ZNF547  | Q8IVP9 | KRAB | 10 | 105   |  |
| ZSCAN29 | Q8IWY8 | SCAN | 6  | 179.2 |  |
| ZNF595  | Q8IYB9 | KRAB | 17 | 105   |  |
| ZNF34   | Q8IZ26 | KRAB | 12 | 105   |  |
| ZFP82   | Q8N141 | KRAB | 12 | 105   |  |
| OSR2    | Q8N2R0 | none | 5  | 847   |  |
| ZNF513  | Q8N8E2 | none | 8  | 320.5 |  |
| ZNF454* | Q8N9F8 | KRAB | 12 | 105   |  |
| ZNF610  | Q8N9Z0 | KRAB | 8  | 105   |  |

|         |        |           |    |      |                                                                                                          |
|---------|--------|-----------|----|------|----------------------------------------------------------------------------------------------------------|
| GLIS1   | Q8NBF1 | none      | 4  | 936  | <br>(PMID 23332764)   |
| ZNF784  | Q8NCA9 | none      | 6  | 105  | <br>(PMID 23332764)   |
| ZNF680  | Q8NEM1 | KRAB      | 12 | 97.5 |                       |
| ZFP28   | Q8NHY6 | KRAB,KRAB | 14 | 105  |                        |
| ZNF563  | Q8TA94 | KRAB      | 11 | 43.1 |                       |
| ZNF502  | Q8TBZ5 | none      | 14 | 105  |                      |
| ZNF596  | Q8TC21 | KRAB      | 11 | 97.5 |                     |
| ZNF675* | Q8TD23 | KRAB      | 12 | 105  |                     |
| KLF14*  | Q8TD94 | none      | 3  | 936  | <br>(PMID 23332764) |
| ZNF418  | Q8TF45 | KRAB      | 16 | 105  |                     |
| ZNF384  | Q8TF68 | none      | 8  | 733  |                     |

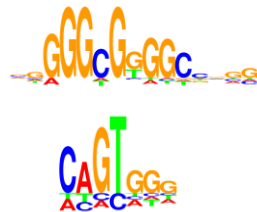


|          |        |      |    |       |                                                                                                        |
|----------|--------|------|----|-------|--------------------------------------------------------------------------------------------------------|
| GTF3A    | Q92664 | none | 9  | 320.5 |                     |
| ZNF669*  | Q96BR6 | KRAB | 9  | 6.6   |                      |
| ZNF524   | Q96C55 | none | 4  | 163.7 | <br>(PMID 23332764) |
| ZNF419   | Q96HQ0 | KRAB | 11 | 105   |                     |
| ZNF594   | Q96JF6 | none | 21 | 105   |                     |
| ZSCAN31* | Q96LW9 | SCAN | 6  | 179.2 |                    |
| ZFP42    | Q96MM3 | none | 4  | 936   |                   |
| ZNF778   | Q96MU6 | KRAB | 14 | 163.7 |                   |
| ZNF582   | Q96NG8 | KRAB | 9  | 105   |                   |
| ZFP3     | Q96NJ6 | none | 13 | 163.7 |                   |
| ZIM3     | Q96PE6 | KRAB | 11 | 97.5  |                   |
| ZNF317*  | Q96PQ6 | KRAB | 13 | 105   |                   |
| ZNF382*  | Q96SR6 | KRAB | 9  | 105   |                   |



|        |        |      |    |       |                                                                                                          |
|--------|--------|------|----|-------|----------------------------------------------------------------------------------------------------------|
| PATZ1  | Q9HBE1 | BTB  | 7  | 320.5 | <br>(PMID 16381825)   |
| ZBTB26 | Q9HCK0 | BTB  | 4  | 355.7 |                        |
| ZFP64  | Q9NPA5 | none | 10 | 320.5 |                       |
| MYNN   | Q9NPC7 | BTB  | 8  | 320.5 |                       |
| PRDM6  | Q9NQX0 | SET  | 3  | 936   |                       |
| ZNF331 | Q9NQX6 | KRAB | 12 | 105   |                       |
| ZNF71* | Q9NQZ8 | none | 13 | 90.9  |                     |
| ZNF586 | Q9NXT0 | KRAB | 8  | 105   |                     |
| ZNF224 | Q9NZL3 | KRAB | 18 | 163.7 |                     |
| KLF15  | Q9UIH9 | none | 3  | 936   | <br>(PMID 23175603) |
| IKZF3  | Q9UKT9 | none | 6  | 320.5 |                     |
| ZNF214 | Q9UL59 | KRAB | 10 | 163.7 |                     |

Supplemental Table S2 - xi

|         |        |      |    |       |                                                                                                        |
|---------|--------|------|----|-------|--------------------------------------------------------------------------------------------------------|
| ZNF490  | Q9ULM2 | KRAB | 13 | 43.1  |                     |
| ZNF257  | Q9Y2Q1 | KRAB | 11 | 97.5  |                     |
| ZNF281  | Q9Y2X9 | none | 4  | 320.5 |                     |
| ZBTB12* | Q9Y330 | BTB  | 4  | 429.6 |                     |
| ZNF175  | Q9Y473 | KRAB | 13 | 105   |                     |
| KLF12   | Q9Y4X4 | none | 3  | 936   | <br>(PMID 16381825) |