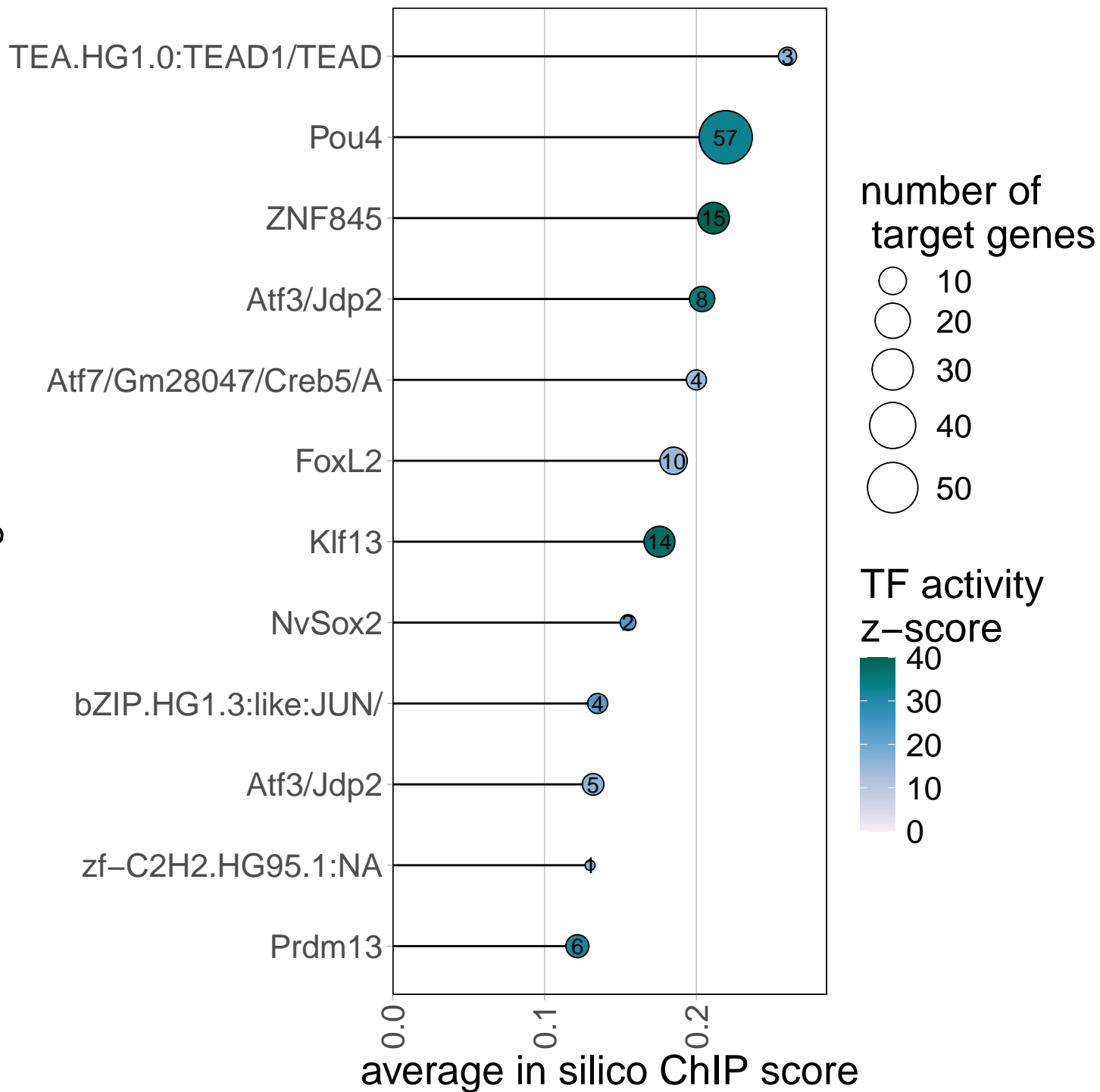


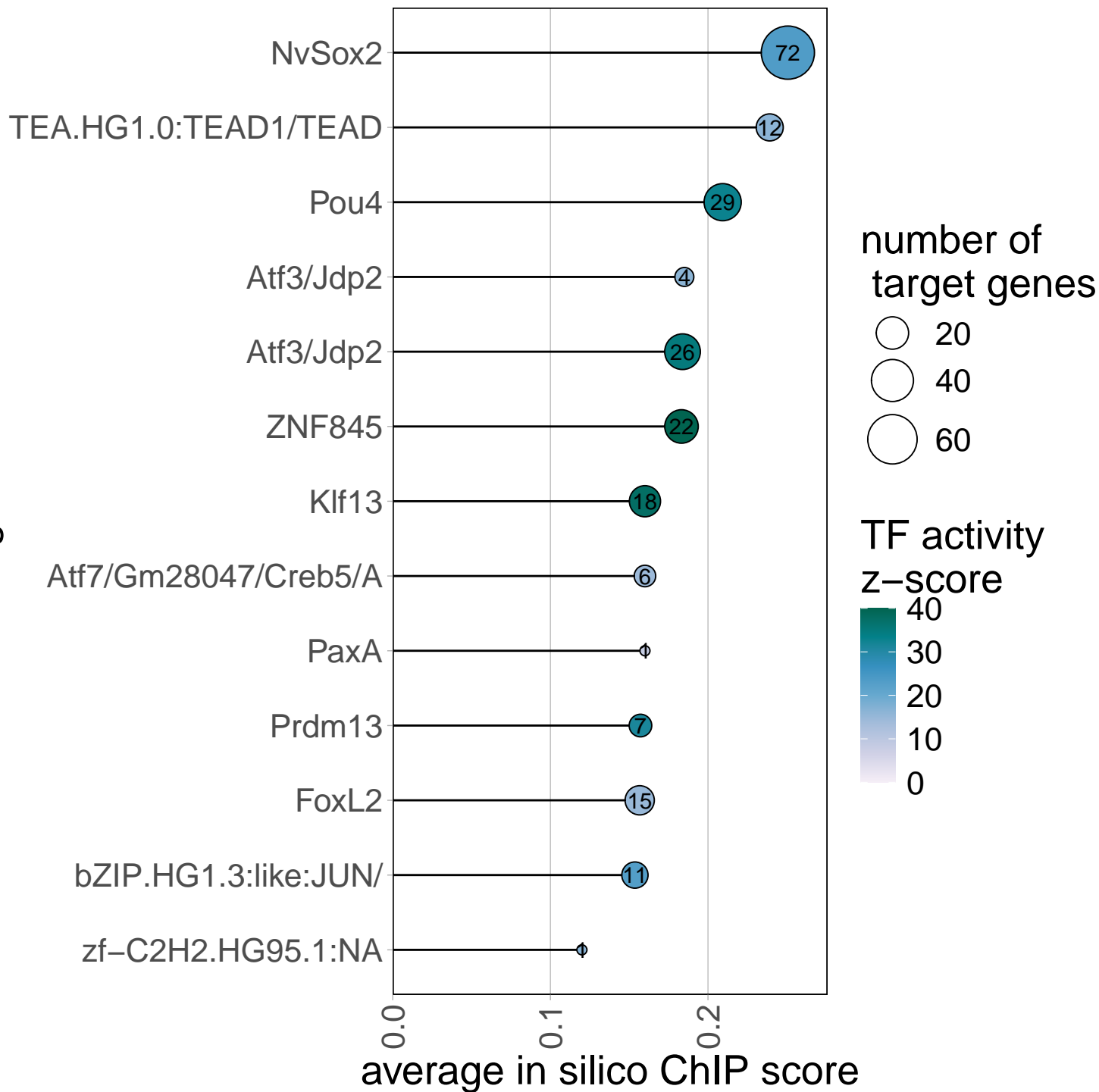
cnidocyte_module_1

gene



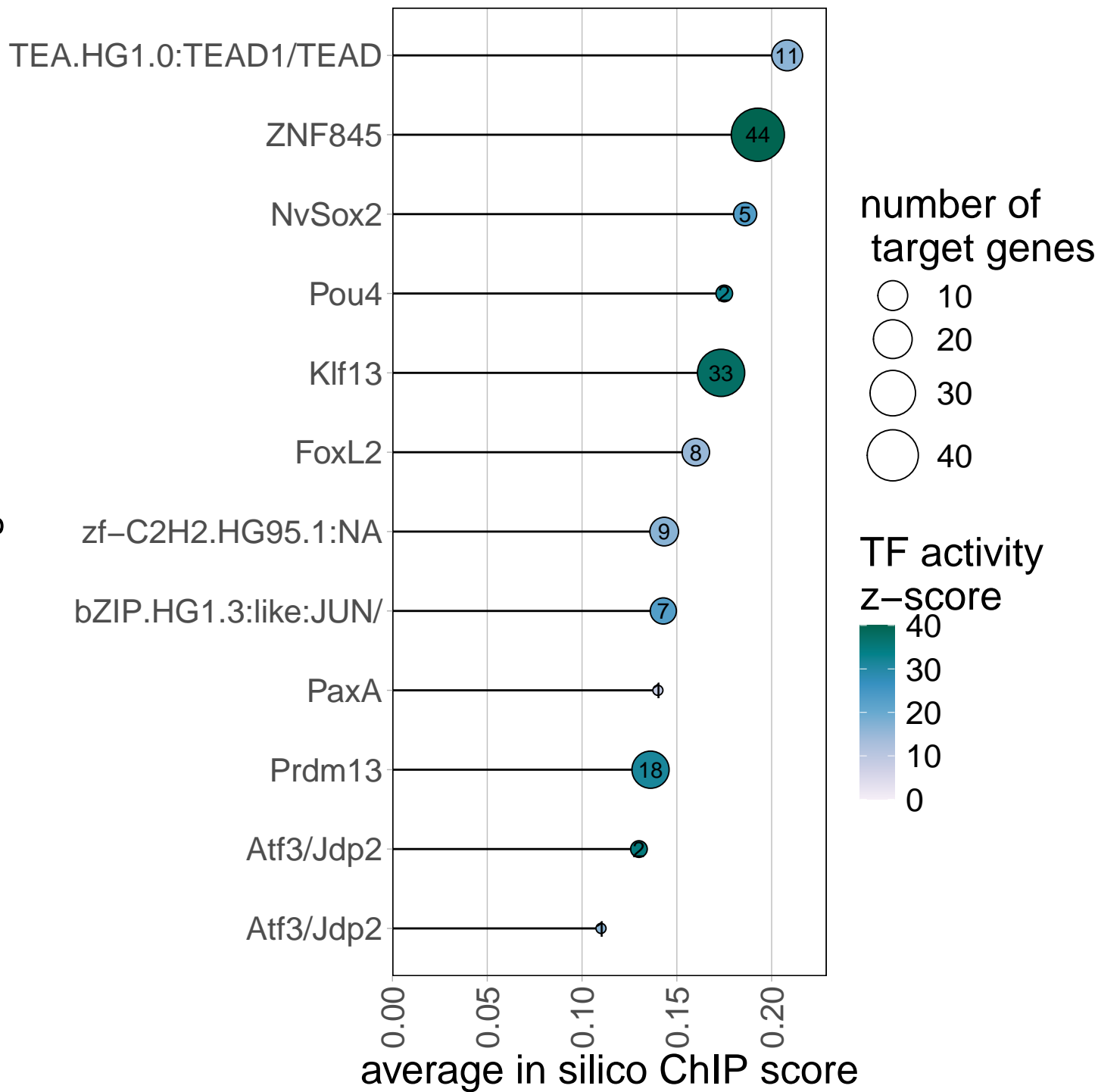
cnidocyte_module_2

gene



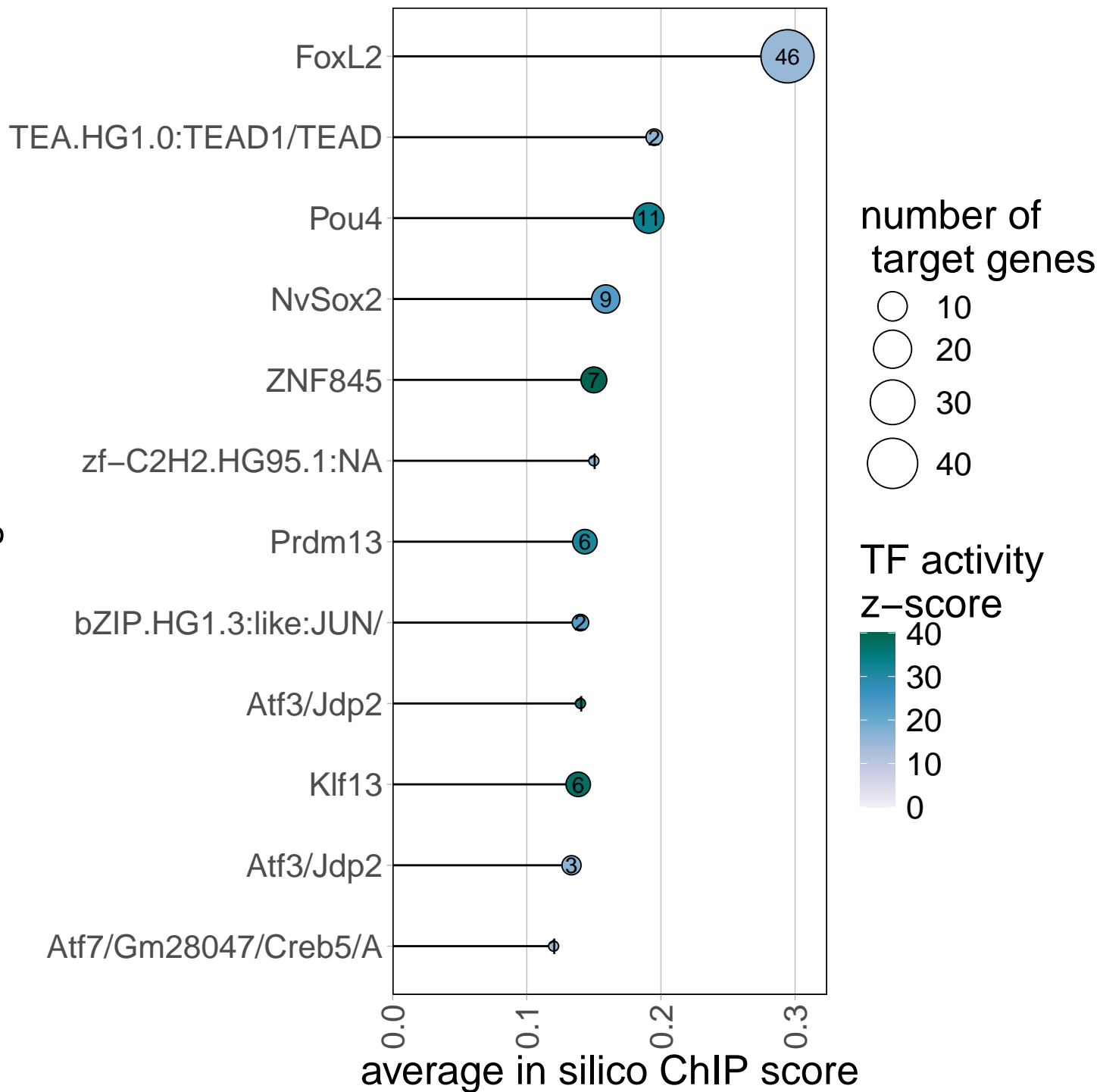
cnidocyte_module_3

gene



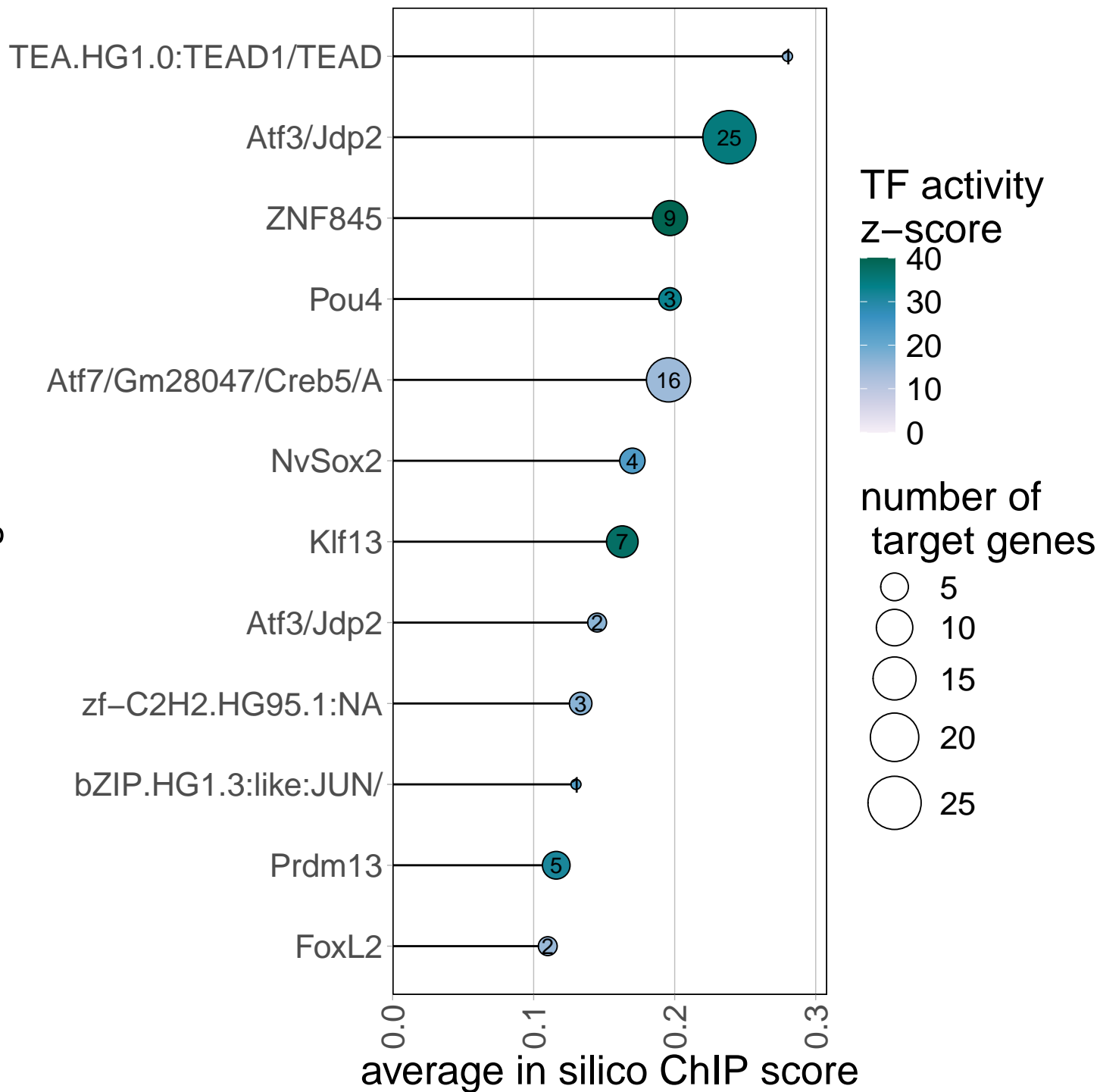
cnidocyte_module_4

gene



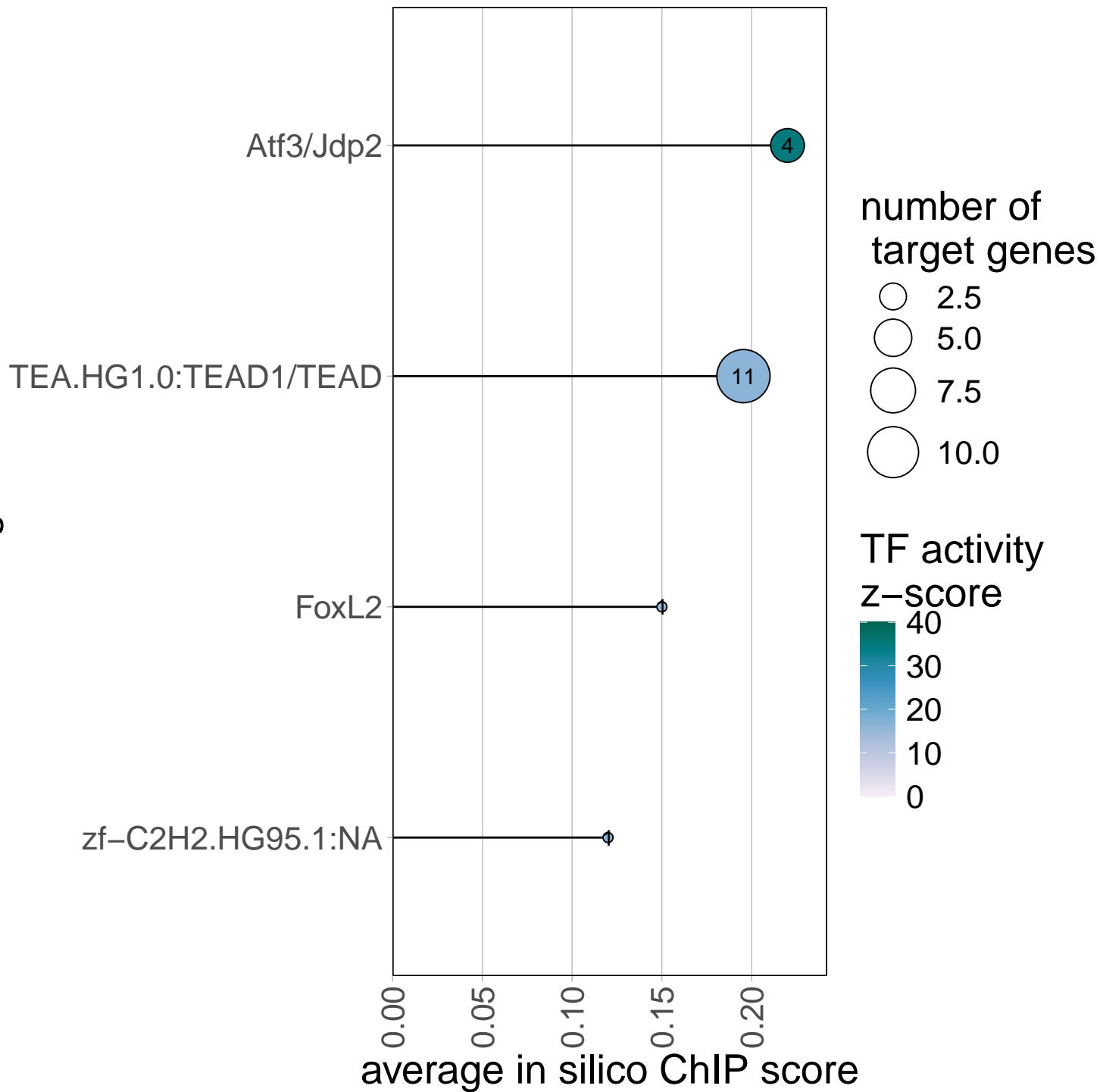
cnidocyte_module_5

gene



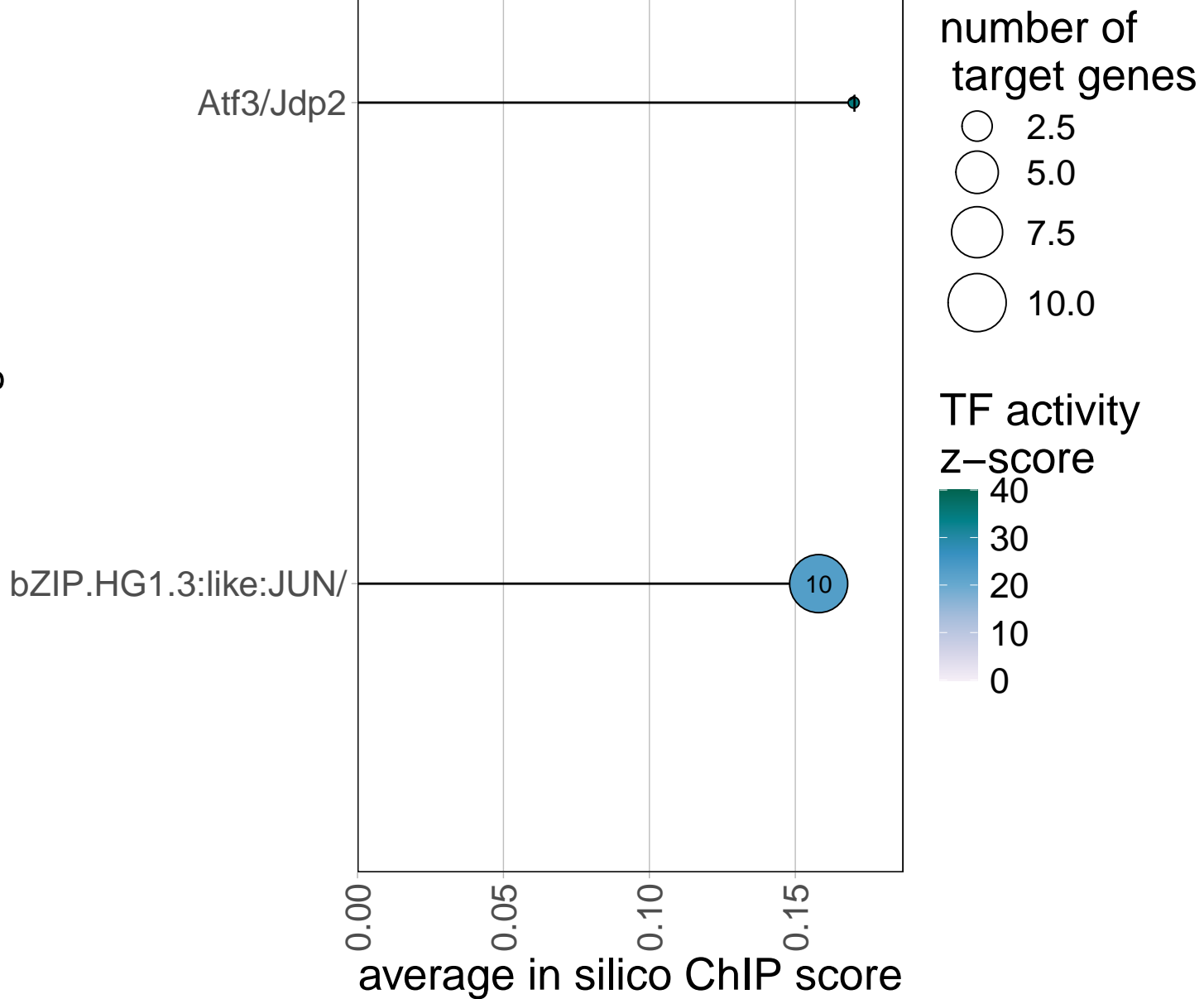
cnidocyte_module_6

gene



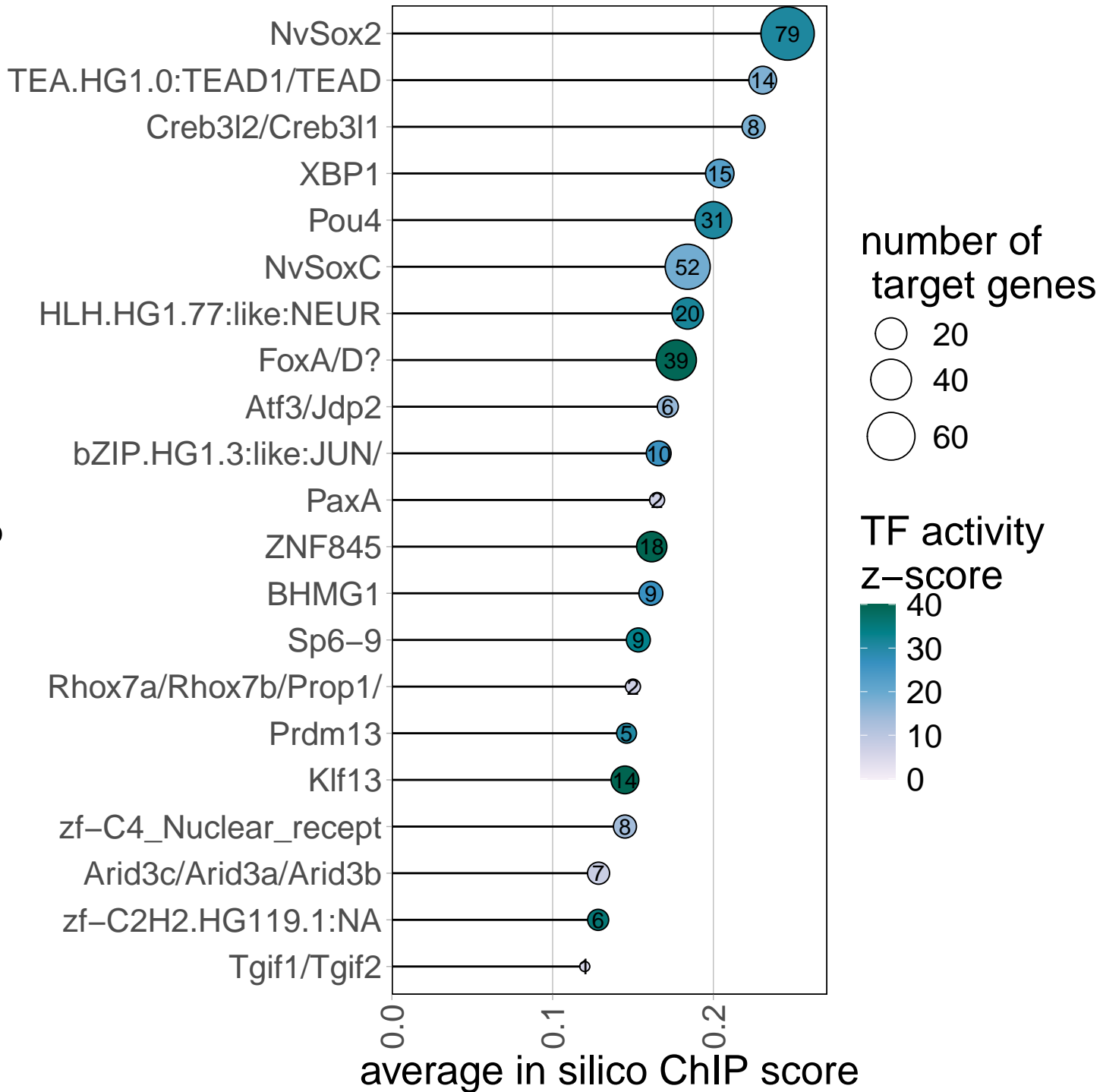
cnidocyte_module_7

gene



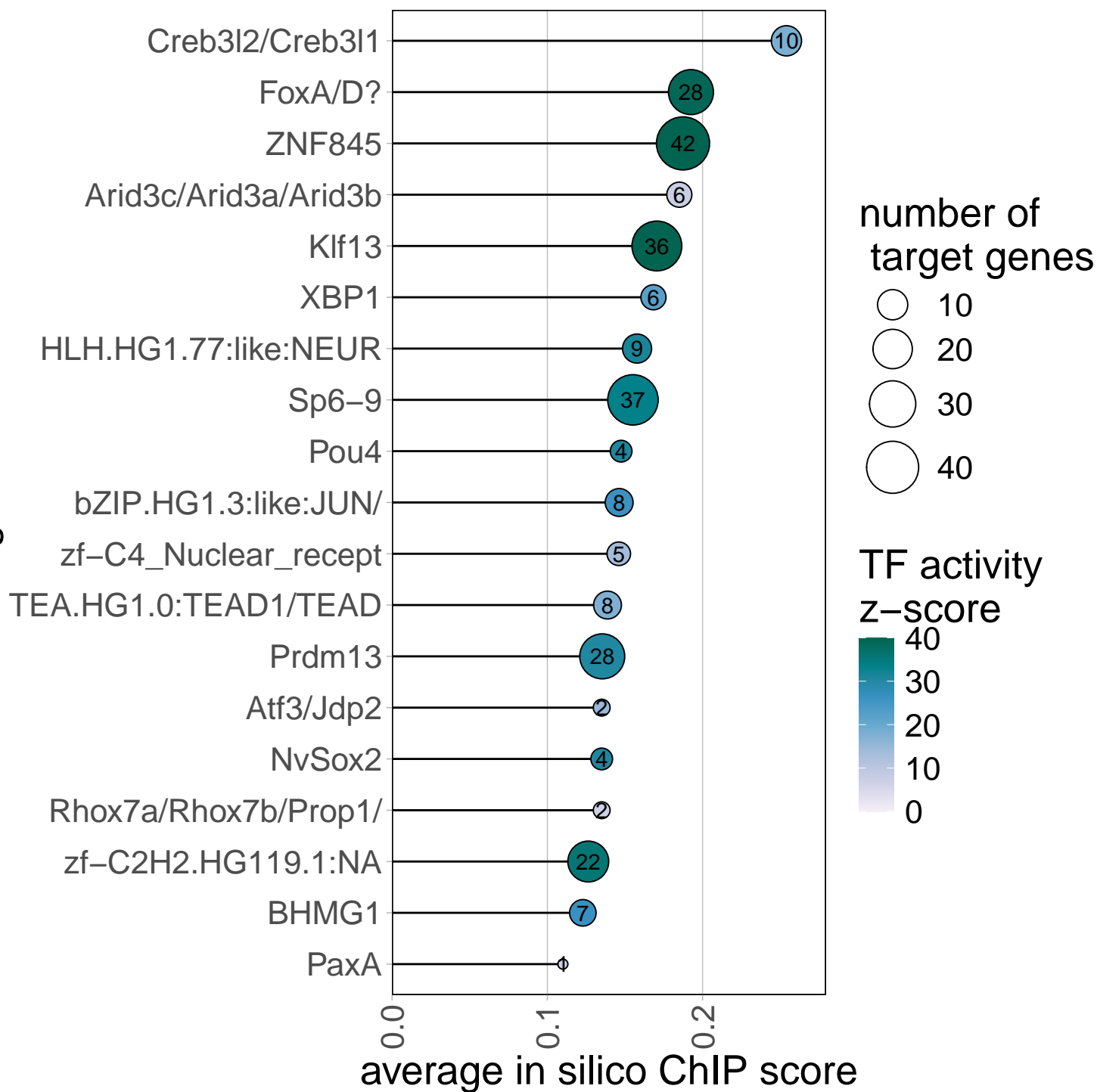
cnidocyte_gastrula_module_1

gene



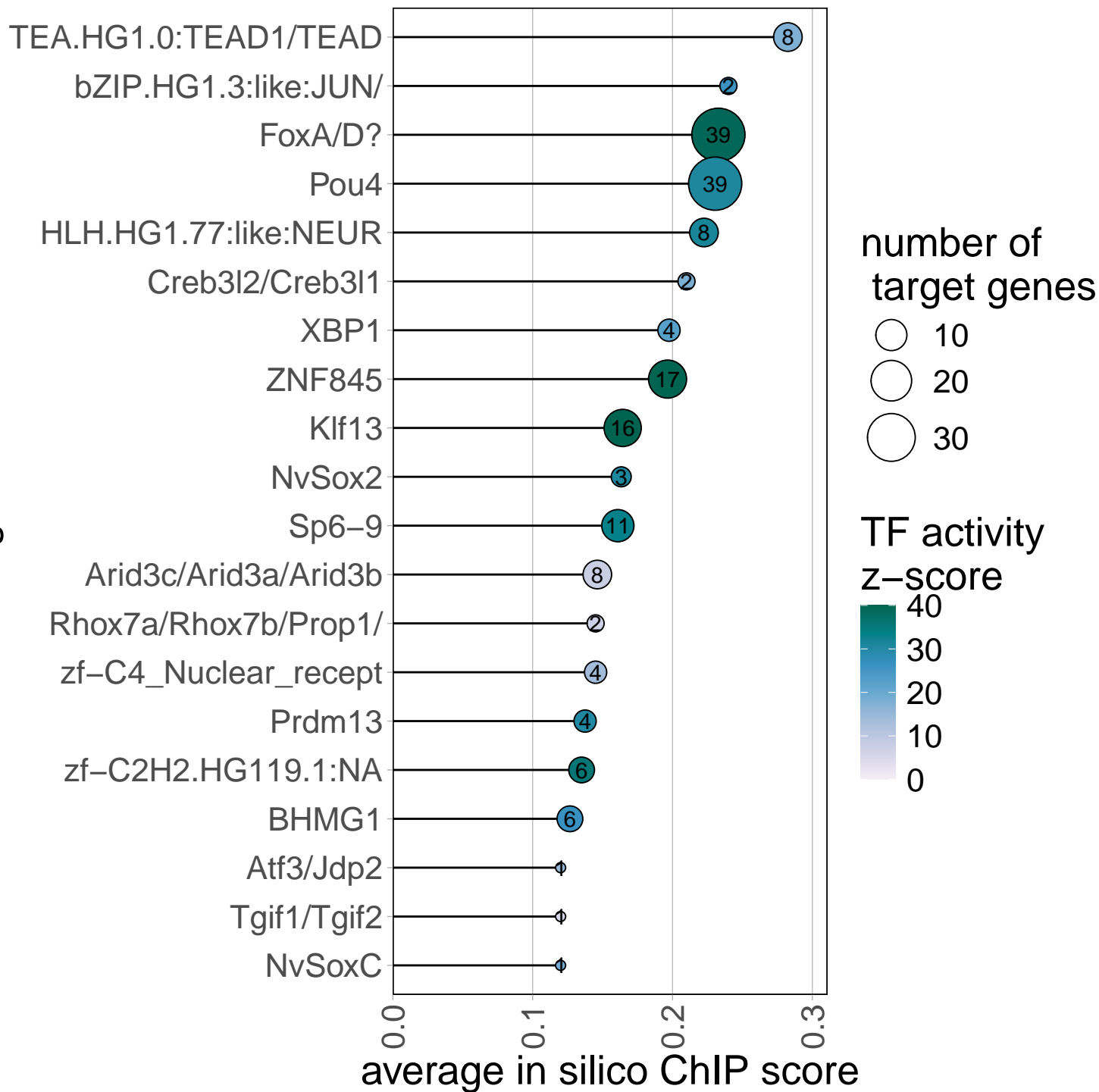
cnidocyte_gastrula_module_2

gene



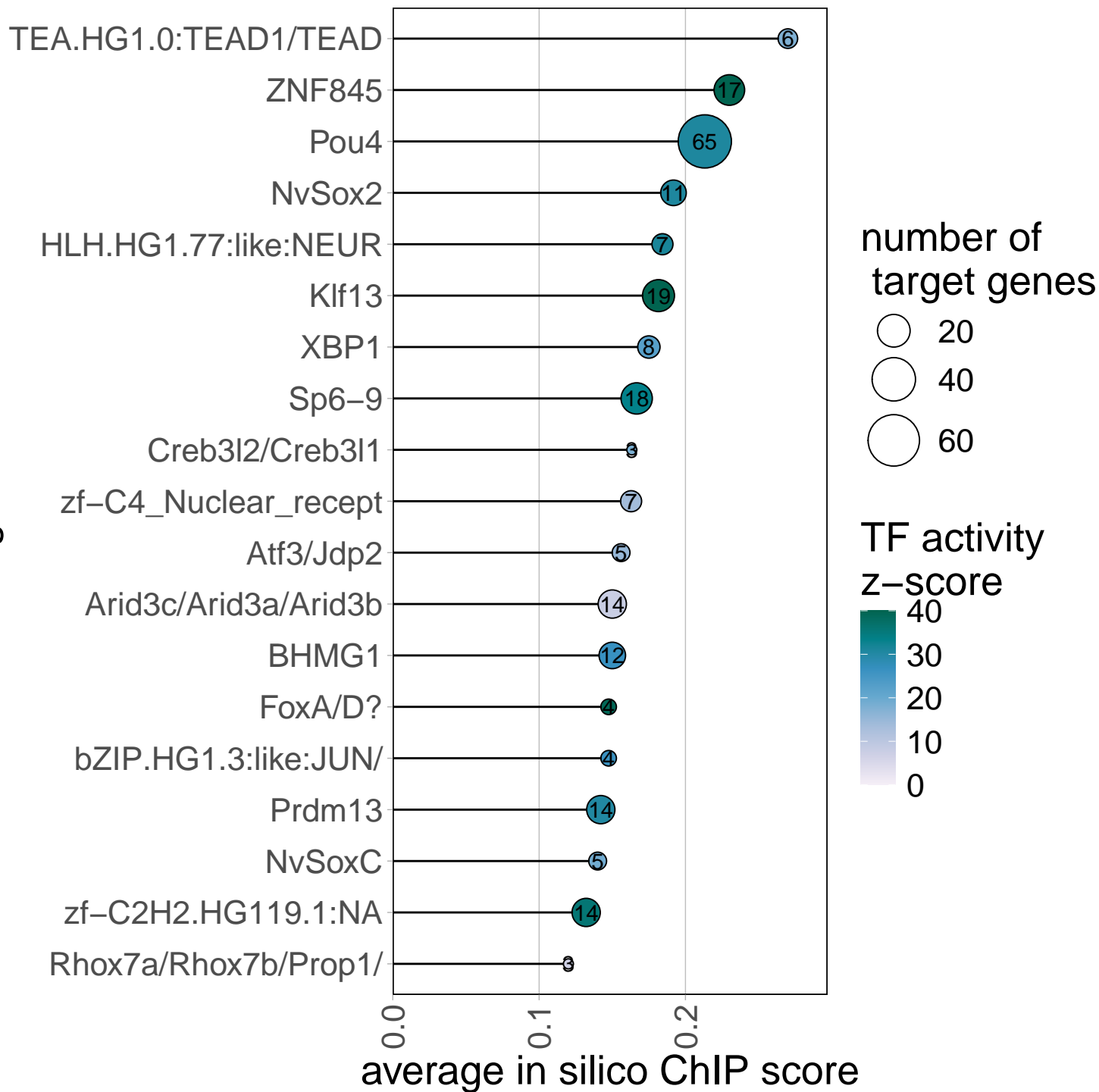
cnidocyte_gastrula_module_3

gene



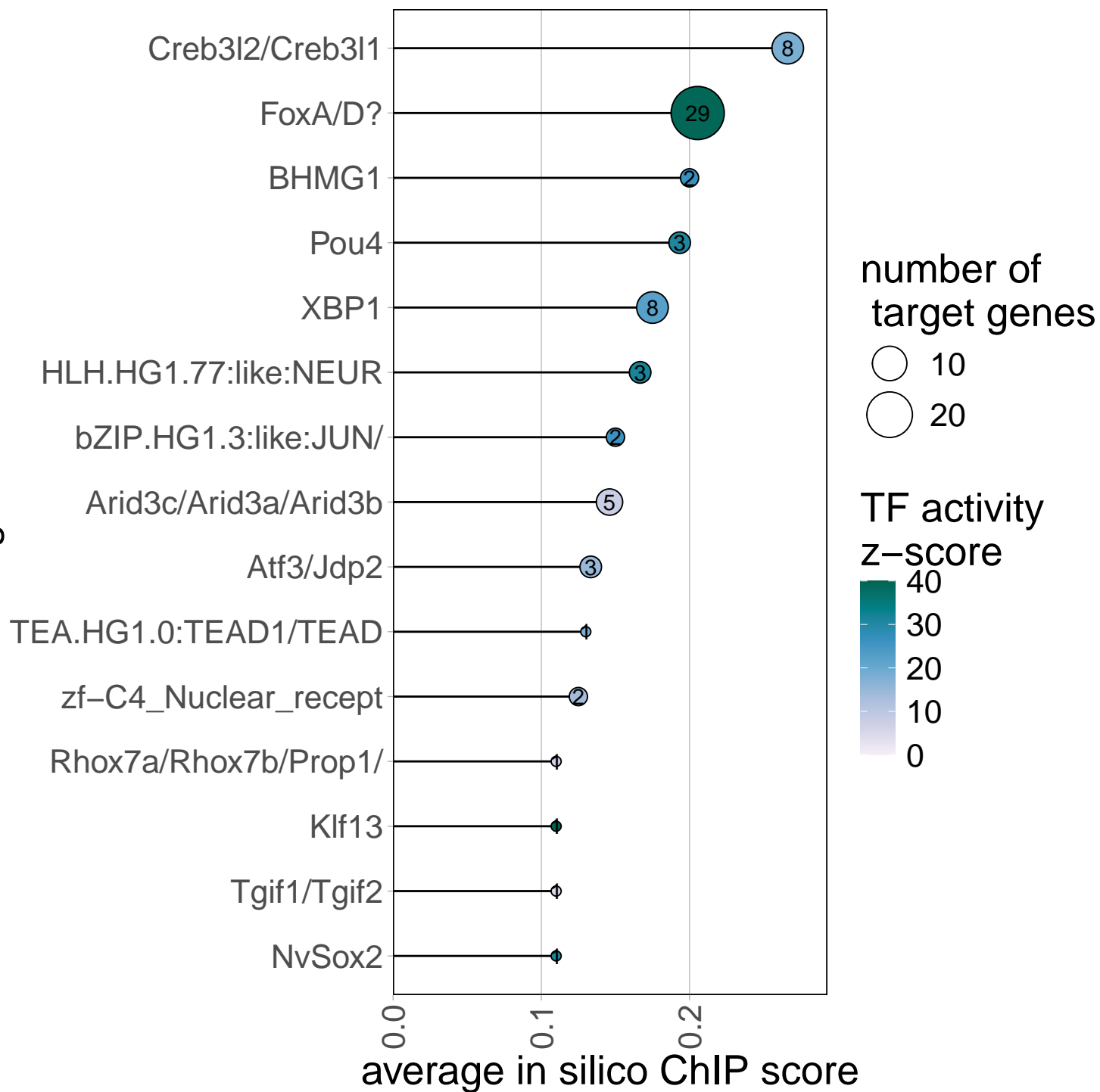
cnidocyte_gastrula_module_4

gene



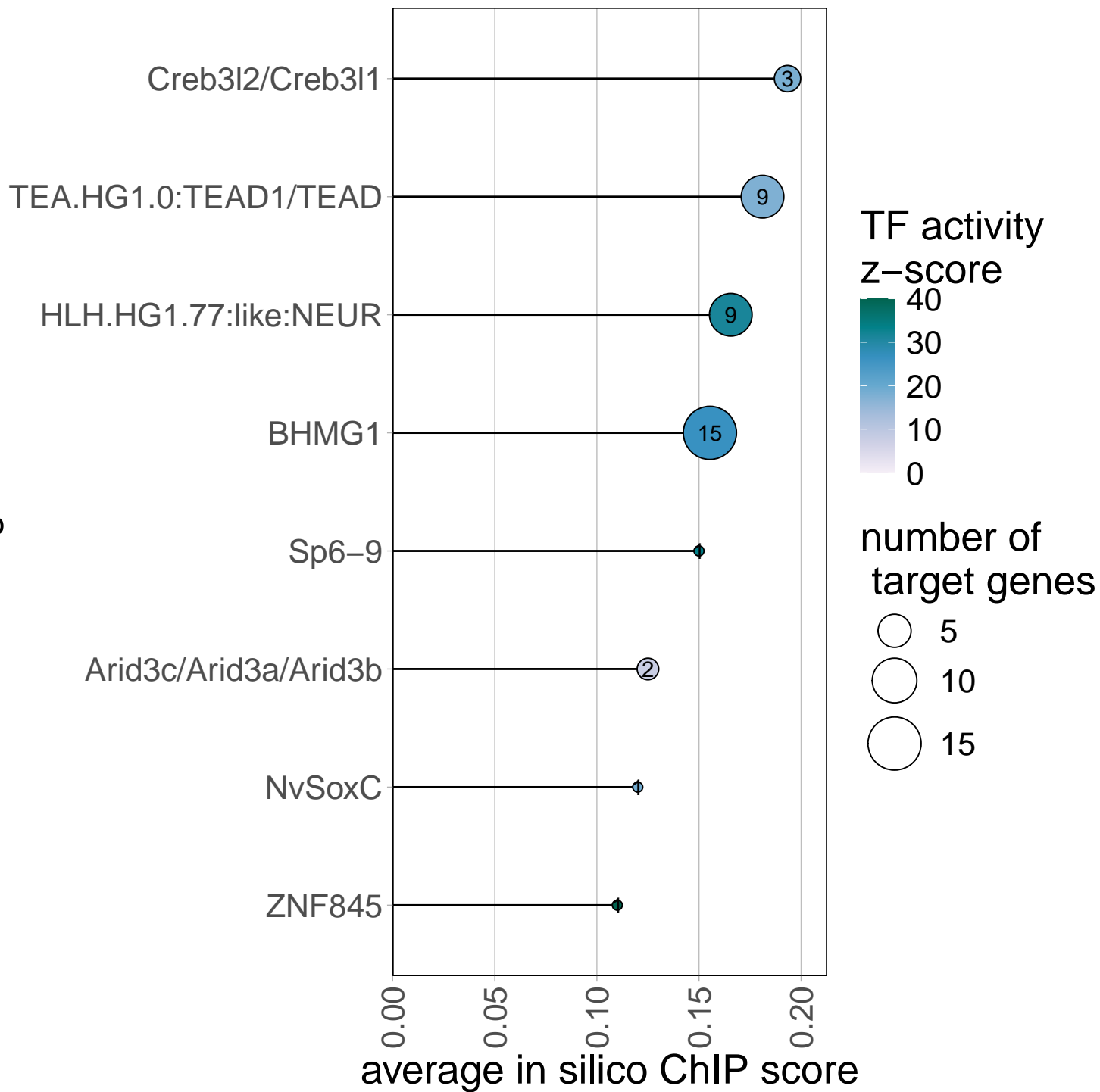
cnidocyte_gastrula_module_5

gene



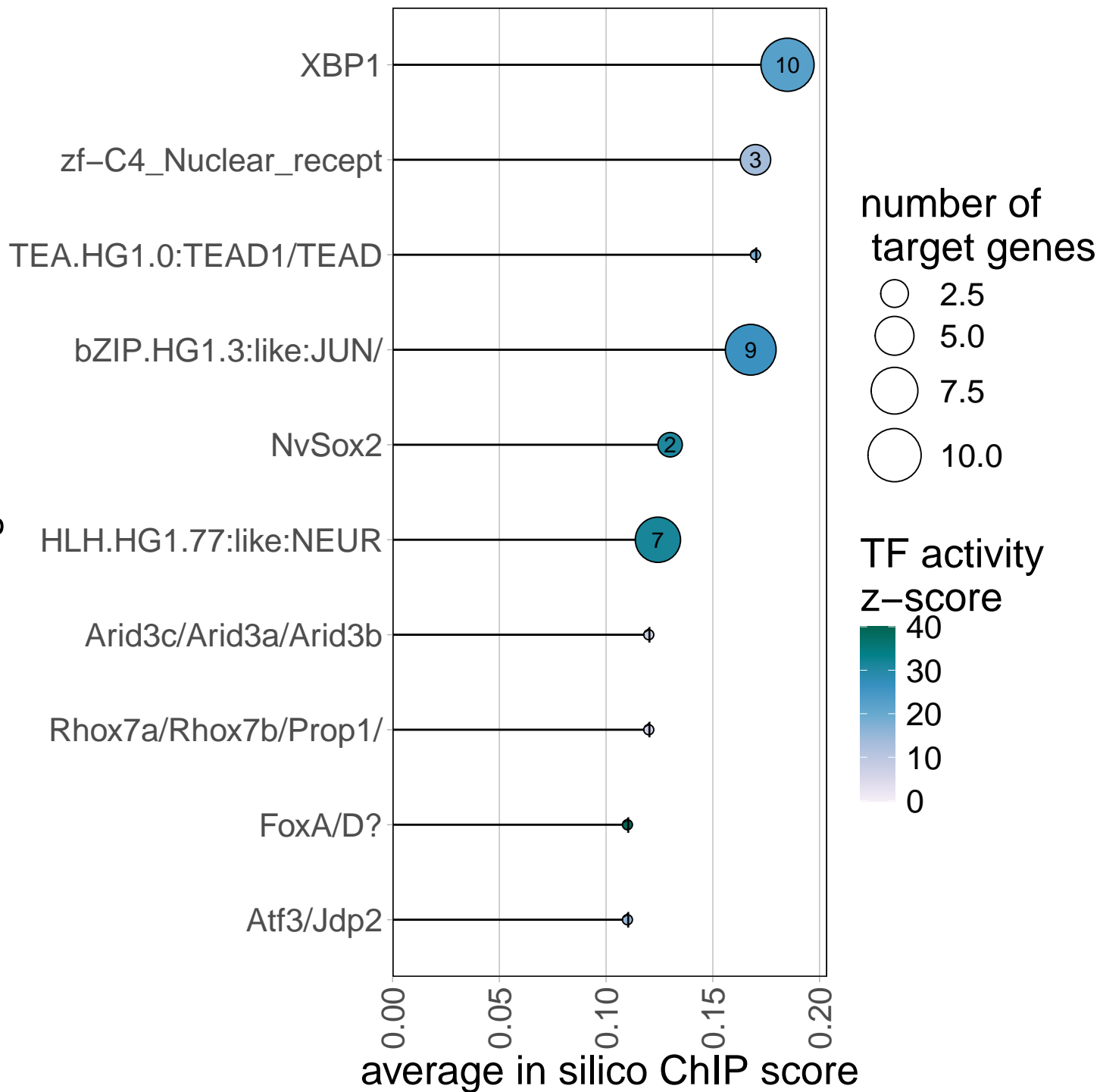
cnidocyte_gastrula_module_6

gene



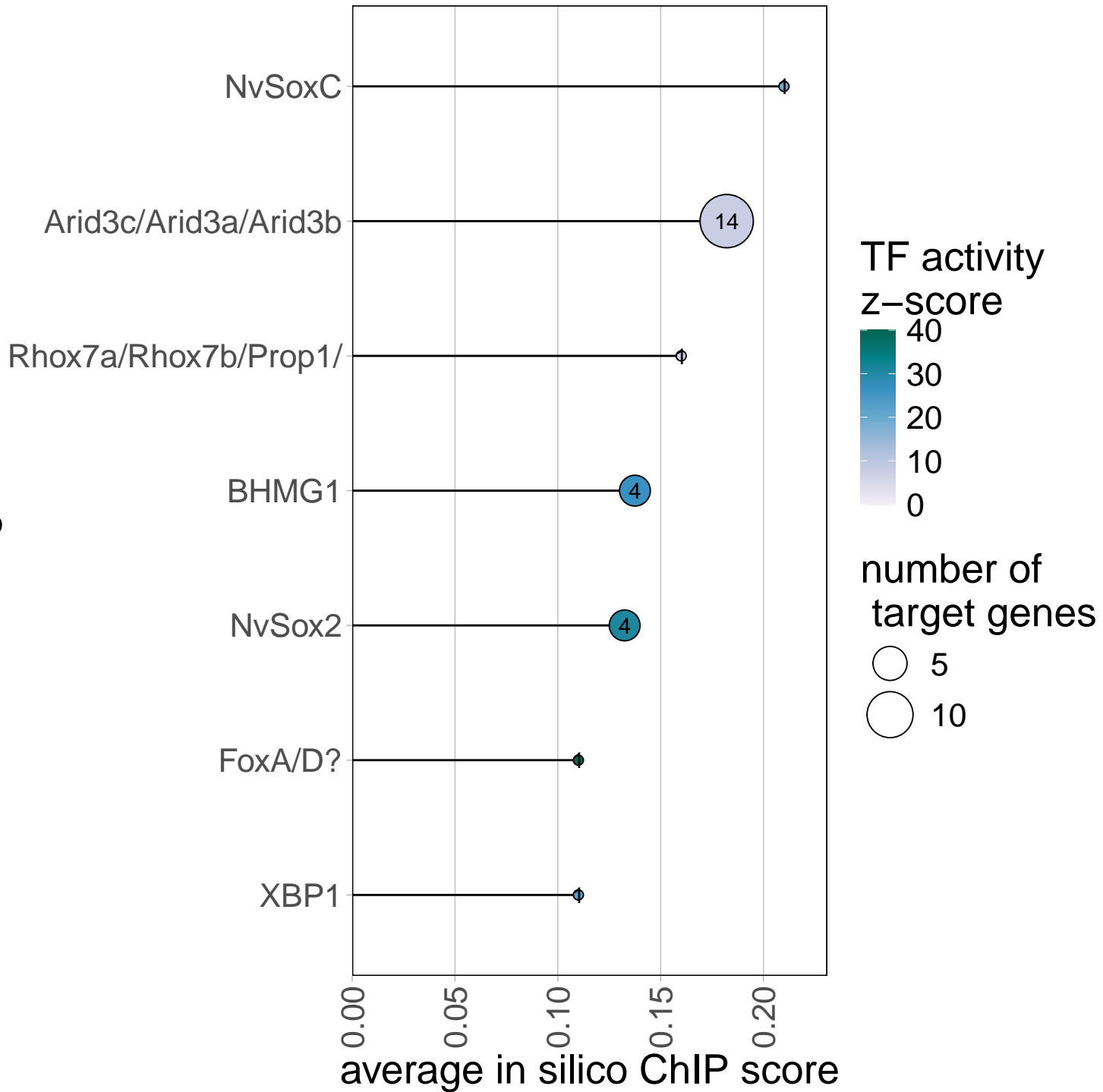
cnidocyte_gastrula_module_7

gene



cnidocyte_gastrula_module_8

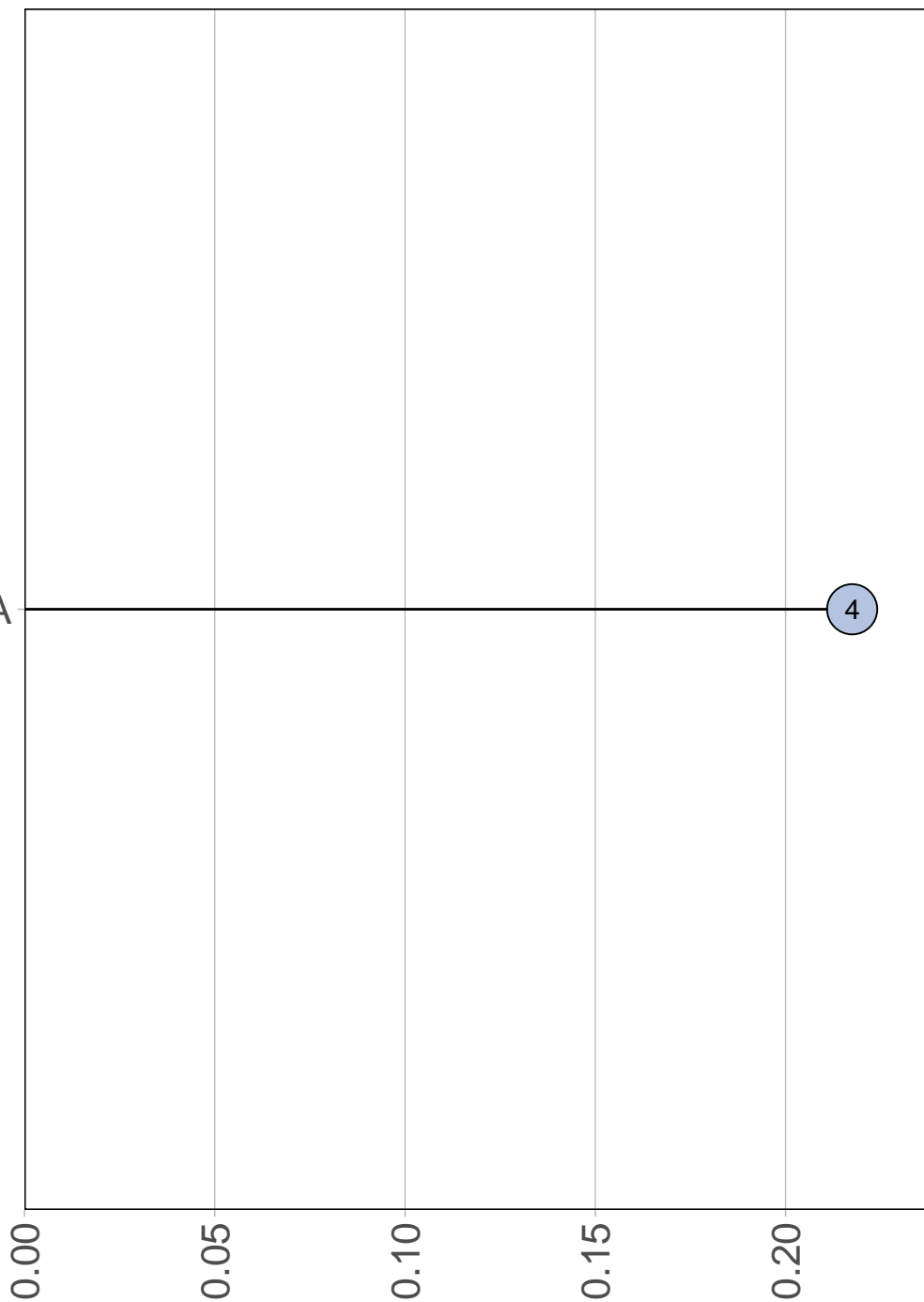
gene



ecto_pharynx_module_1

gene

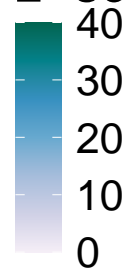
FoxA



number of
target genes

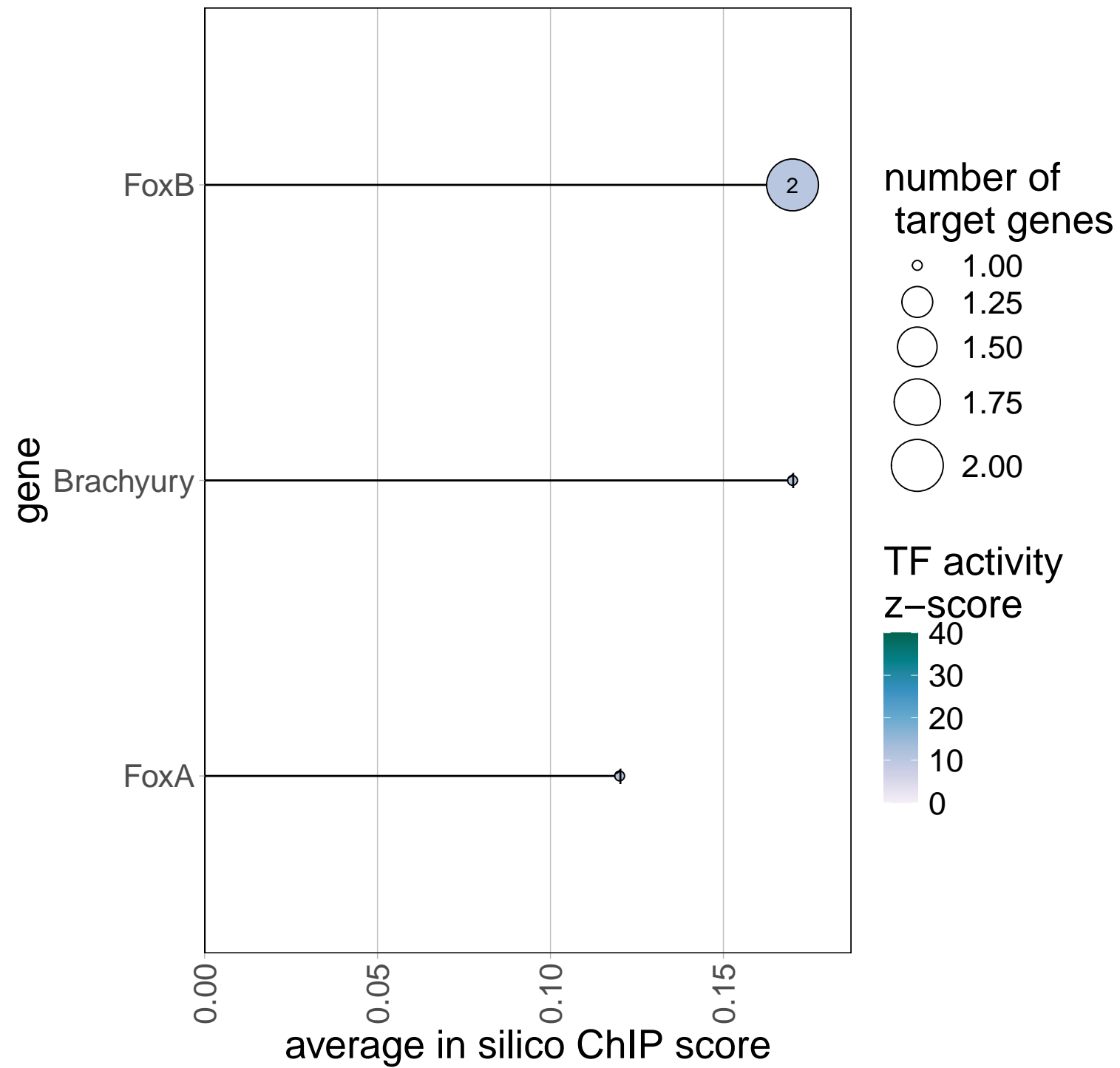


TF activity
z-score



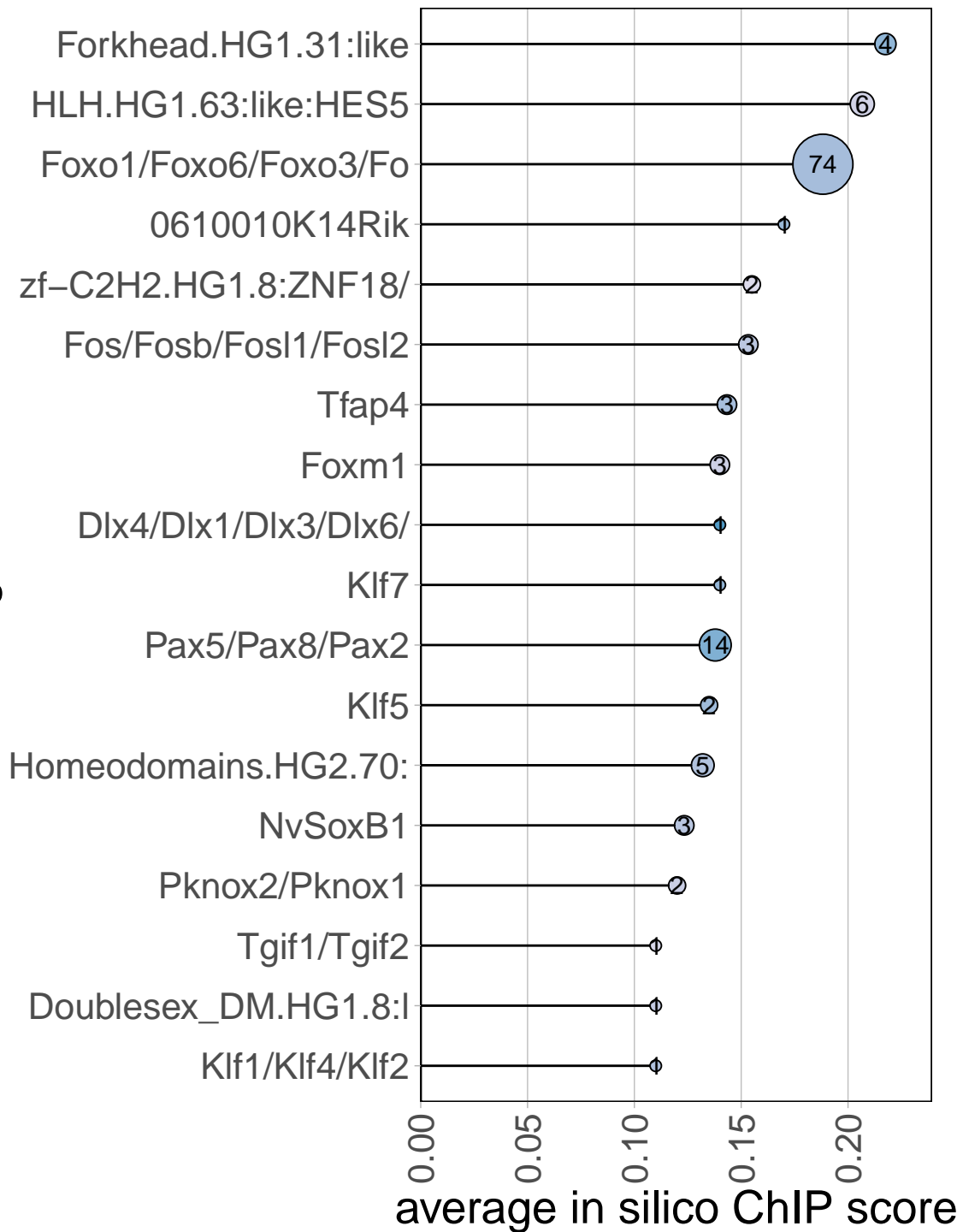
average in silico ChIP score

ecto_pharynx_module_2

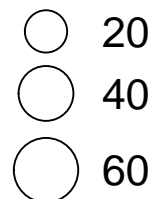


ectoderm_module_1

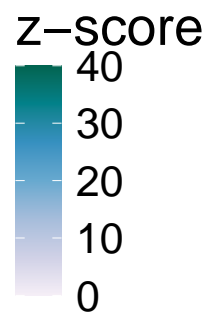
gene



number of target genes

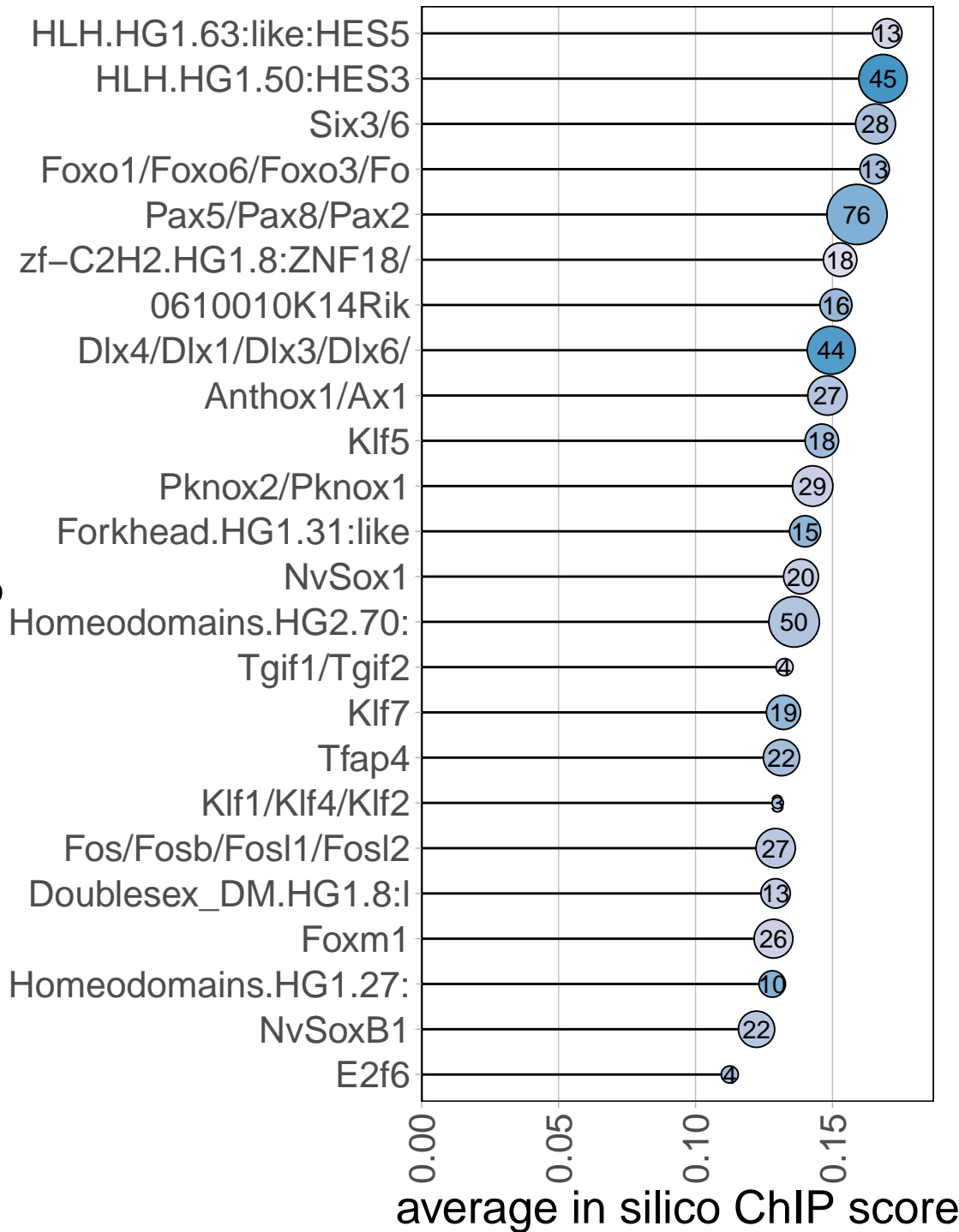


TF activity

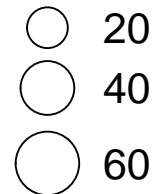


ectoderm_module_2

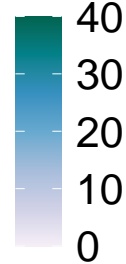
gene



number of
target genes

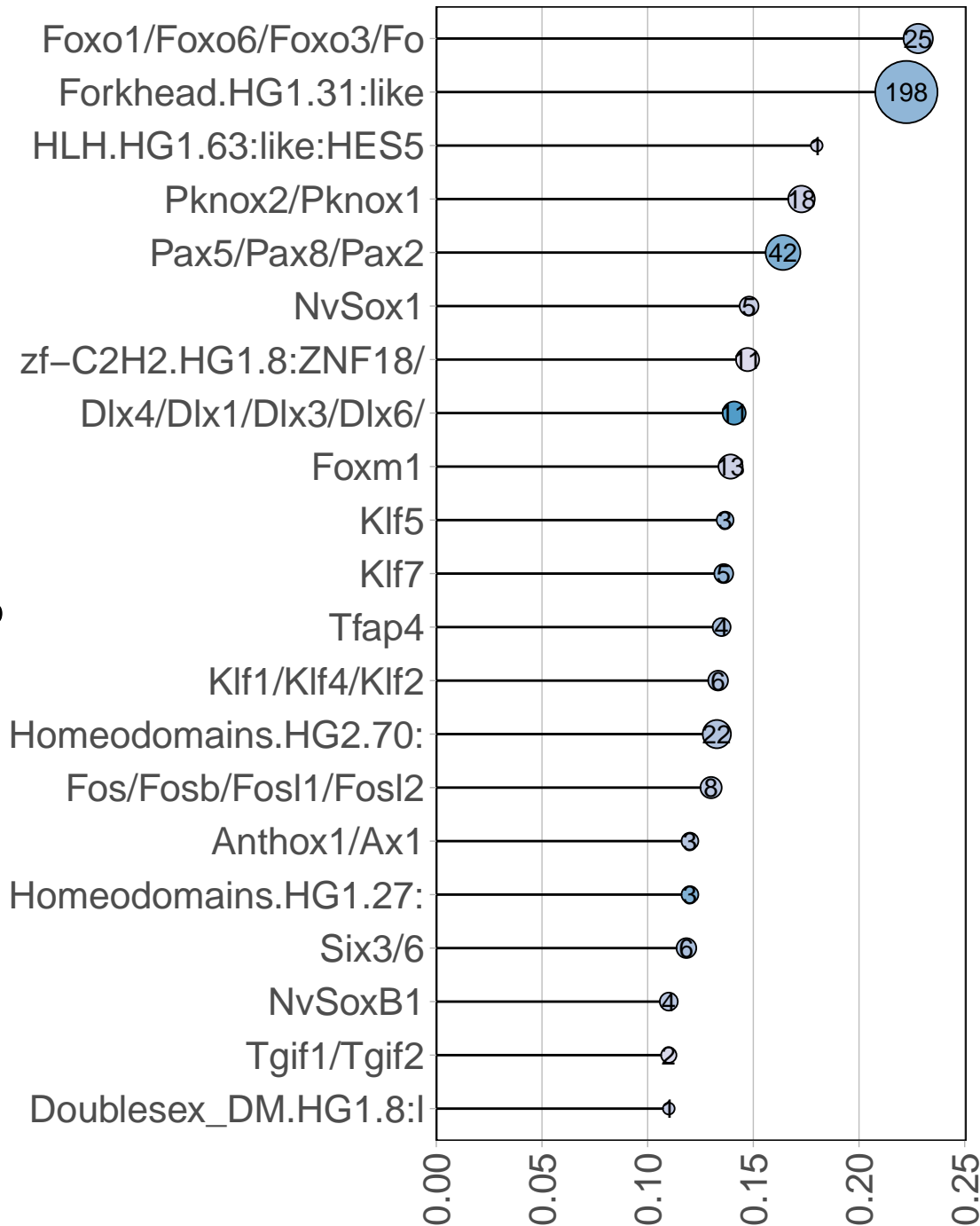


TF activity
z-score

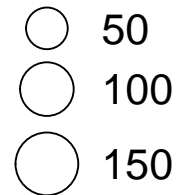


ectoderm_module_3

gene



number of target genes



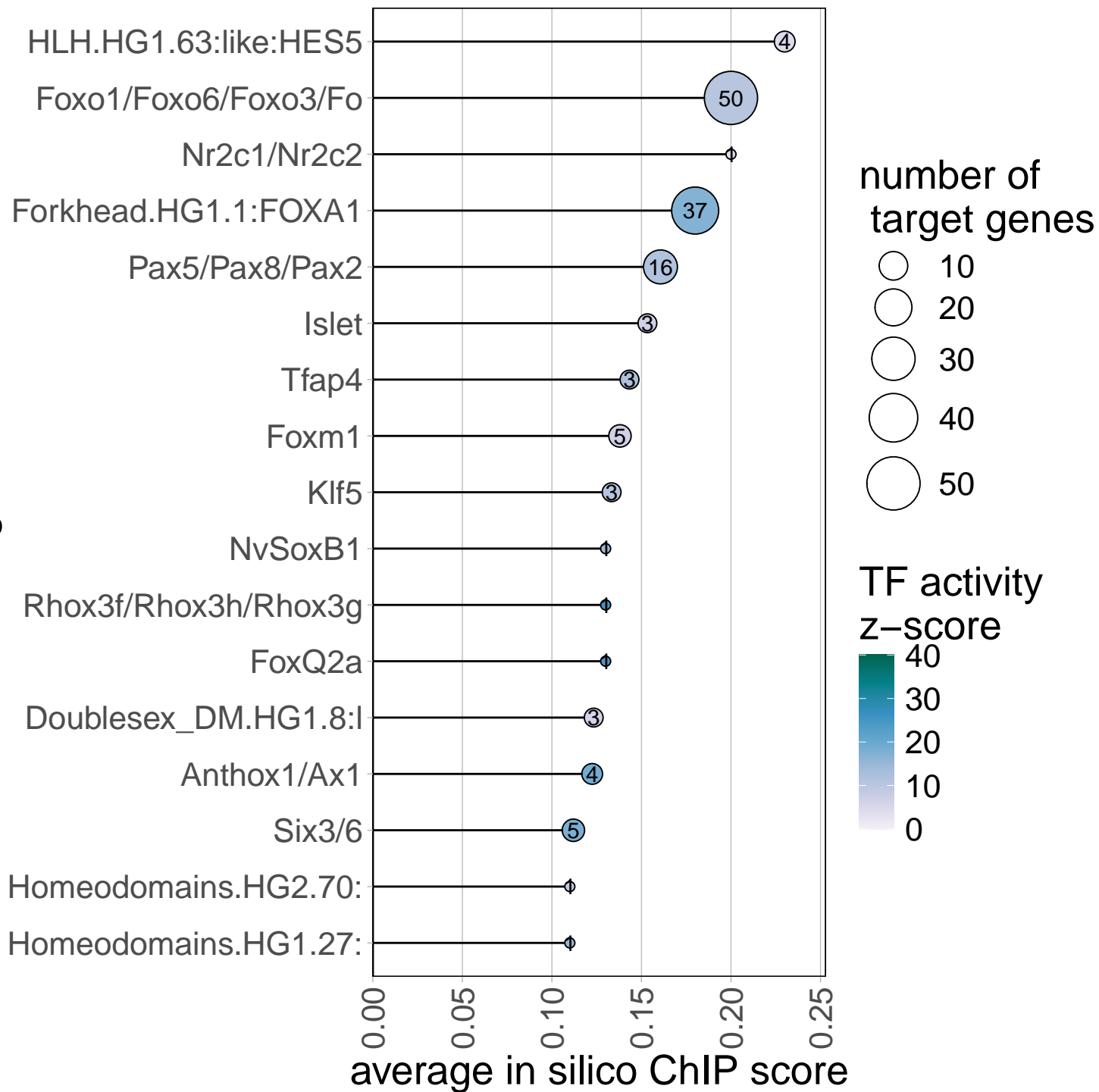
TF activity z-score



average in silico ChIP score

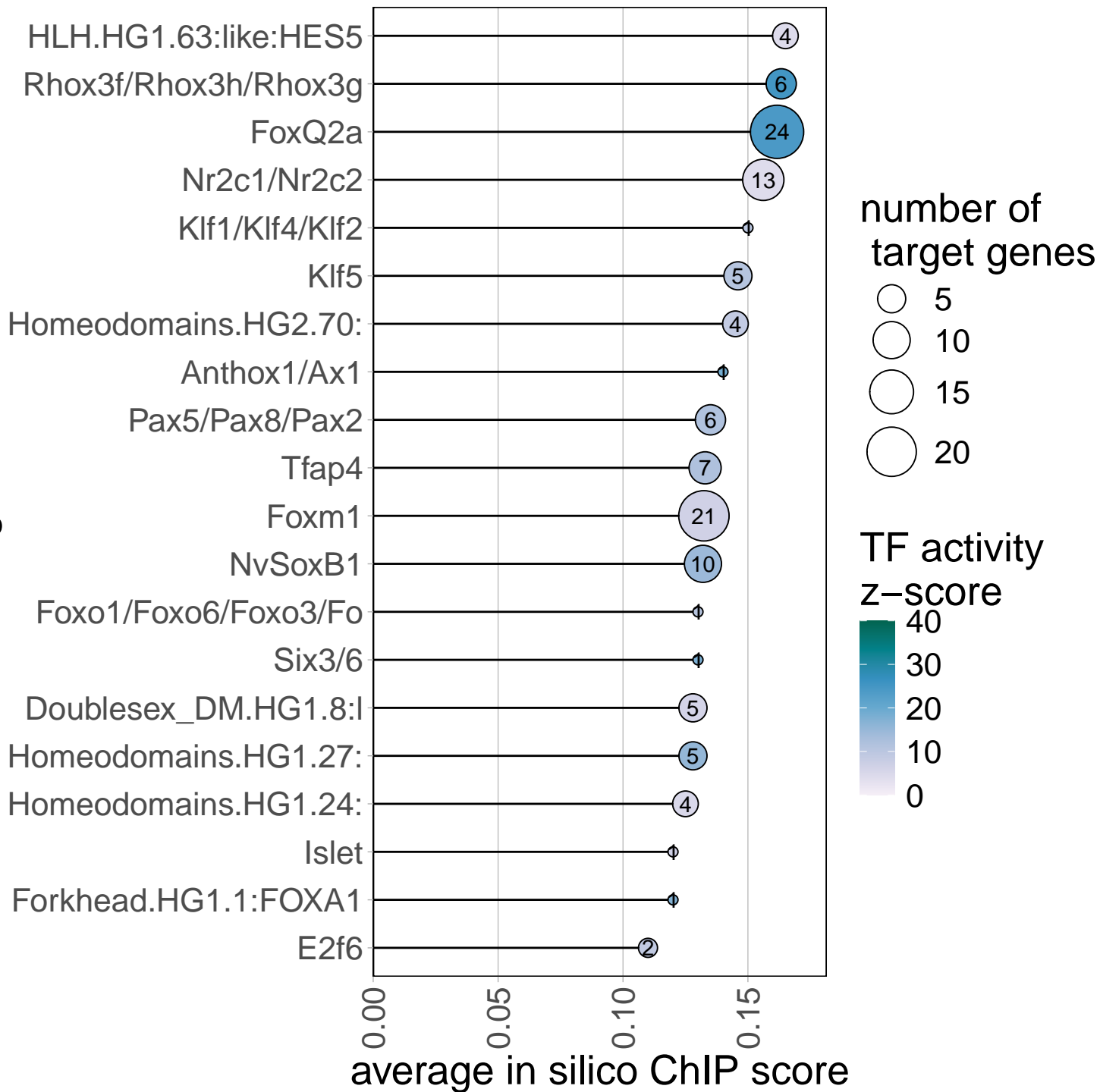
ecto_aboral_module_1

gene



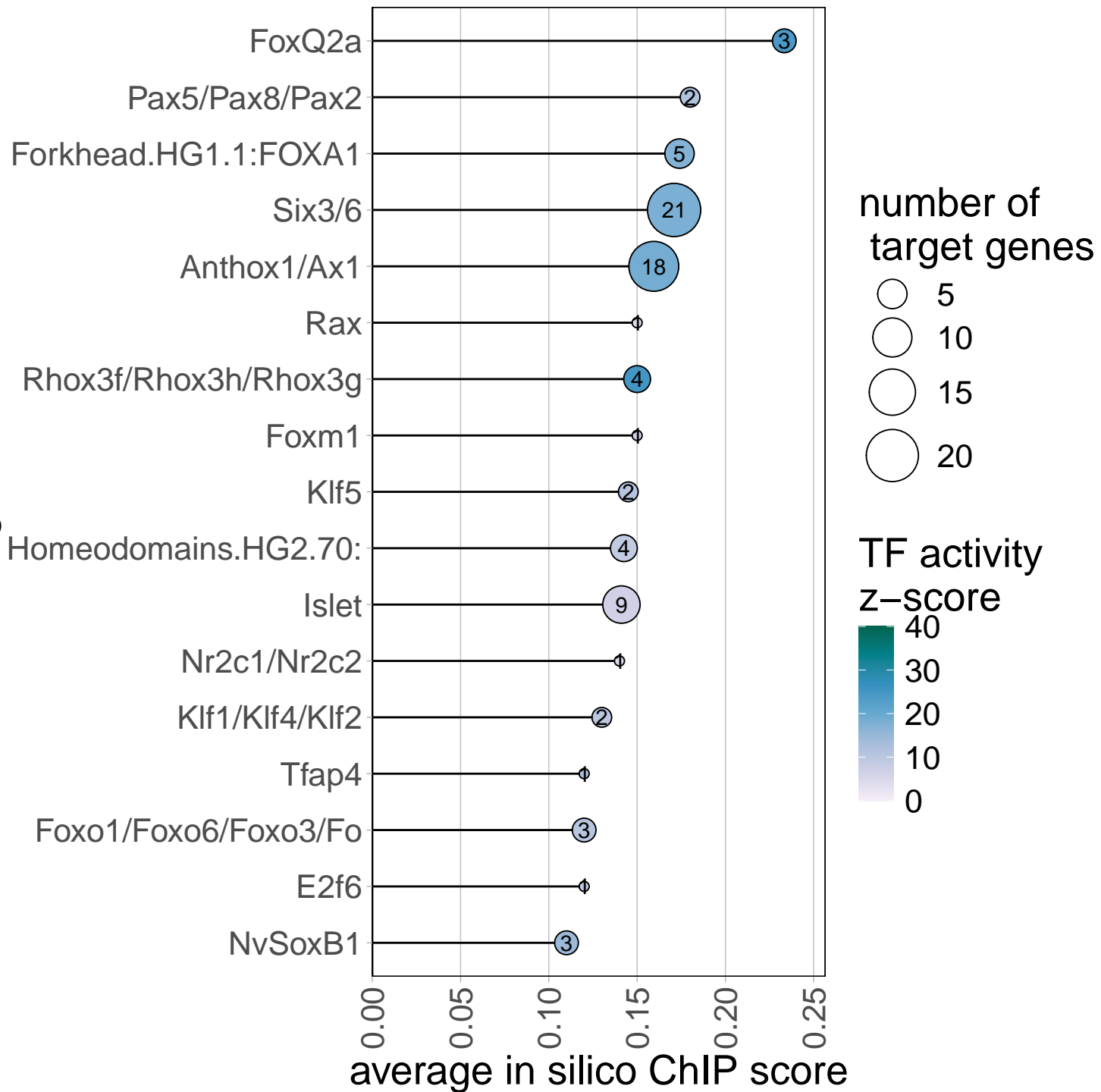
ecto_aboral_module_2

gene



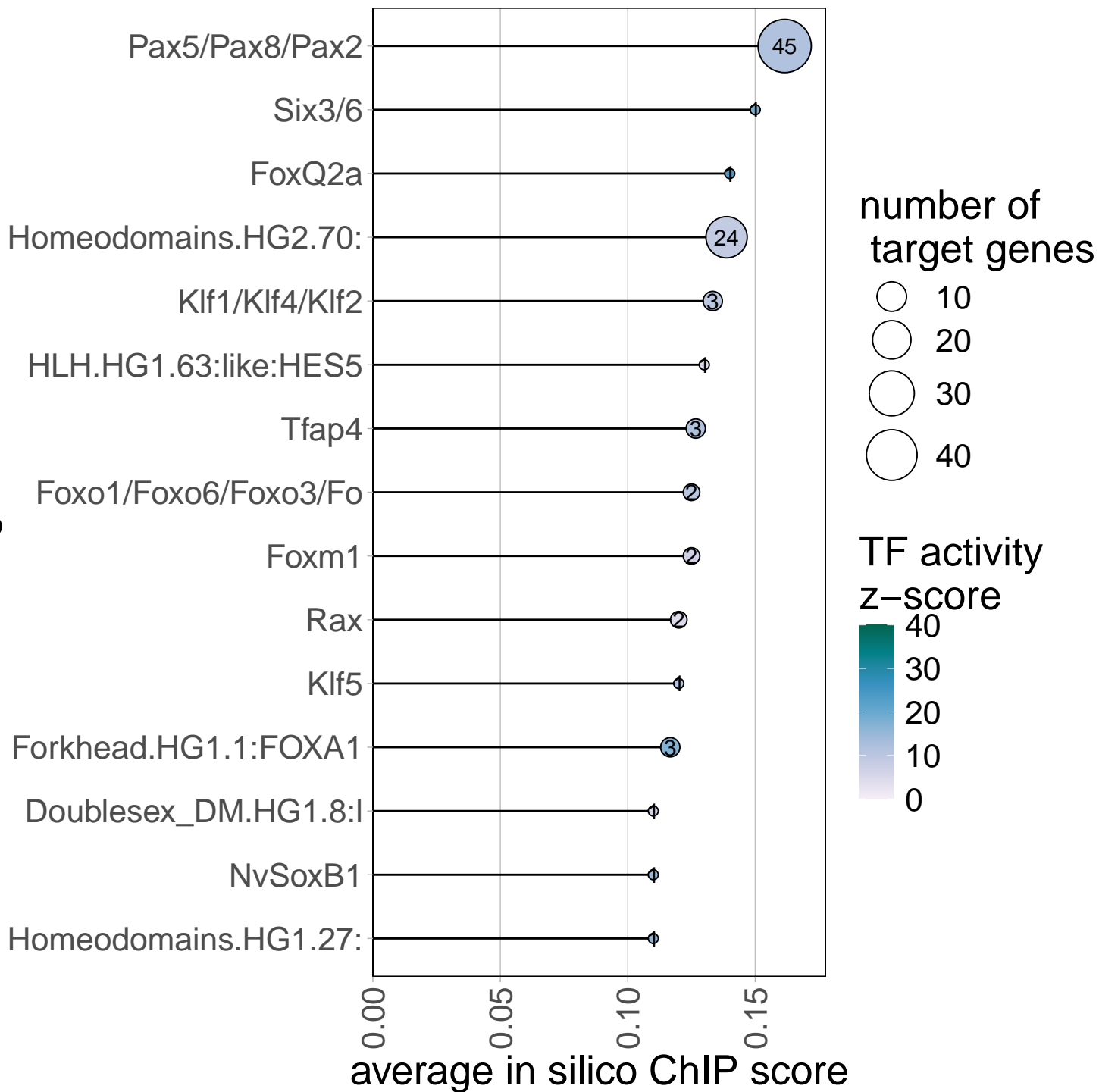
ecto_aboral_module_3

gene



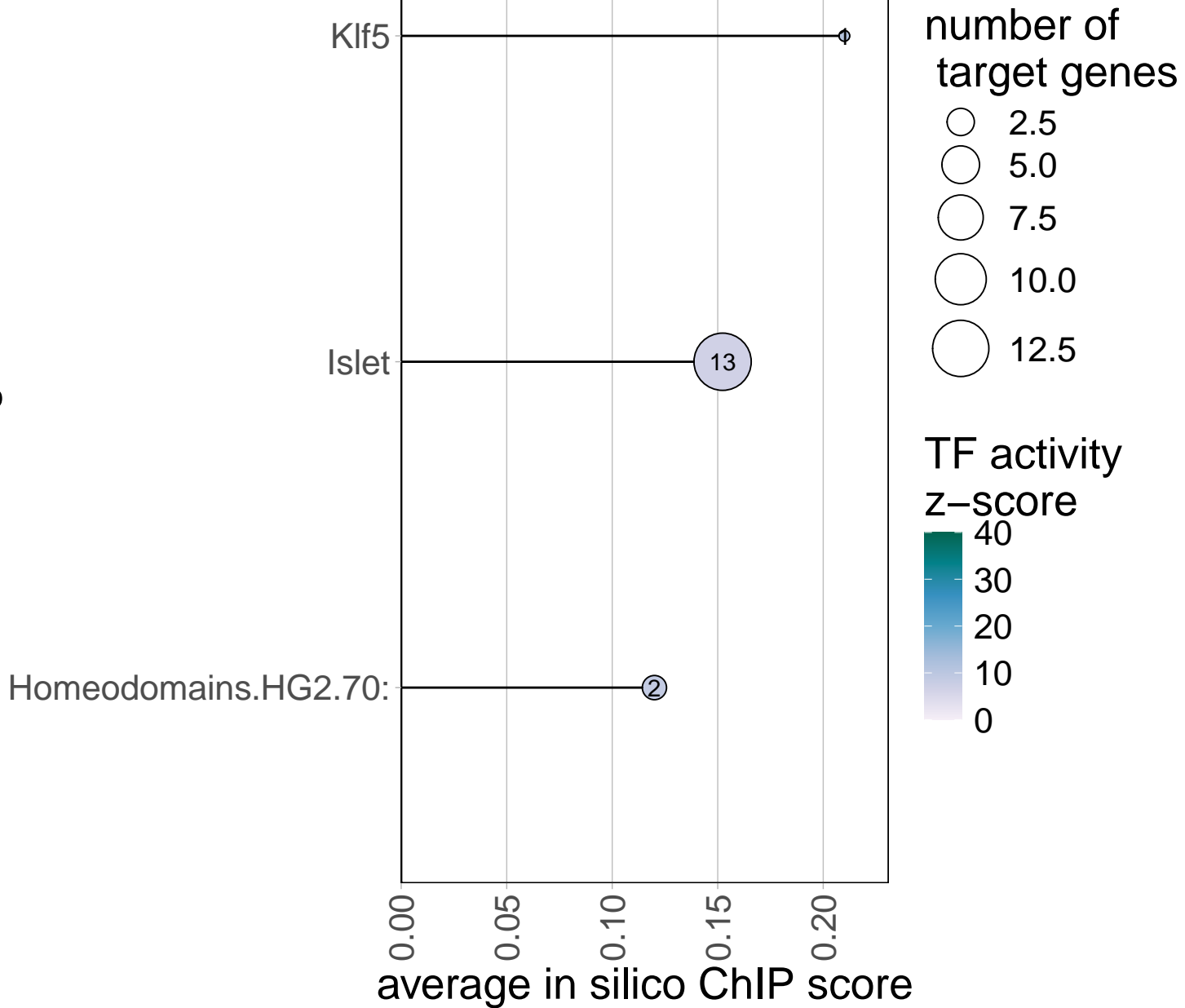
ecto_aboral_module_4

gene



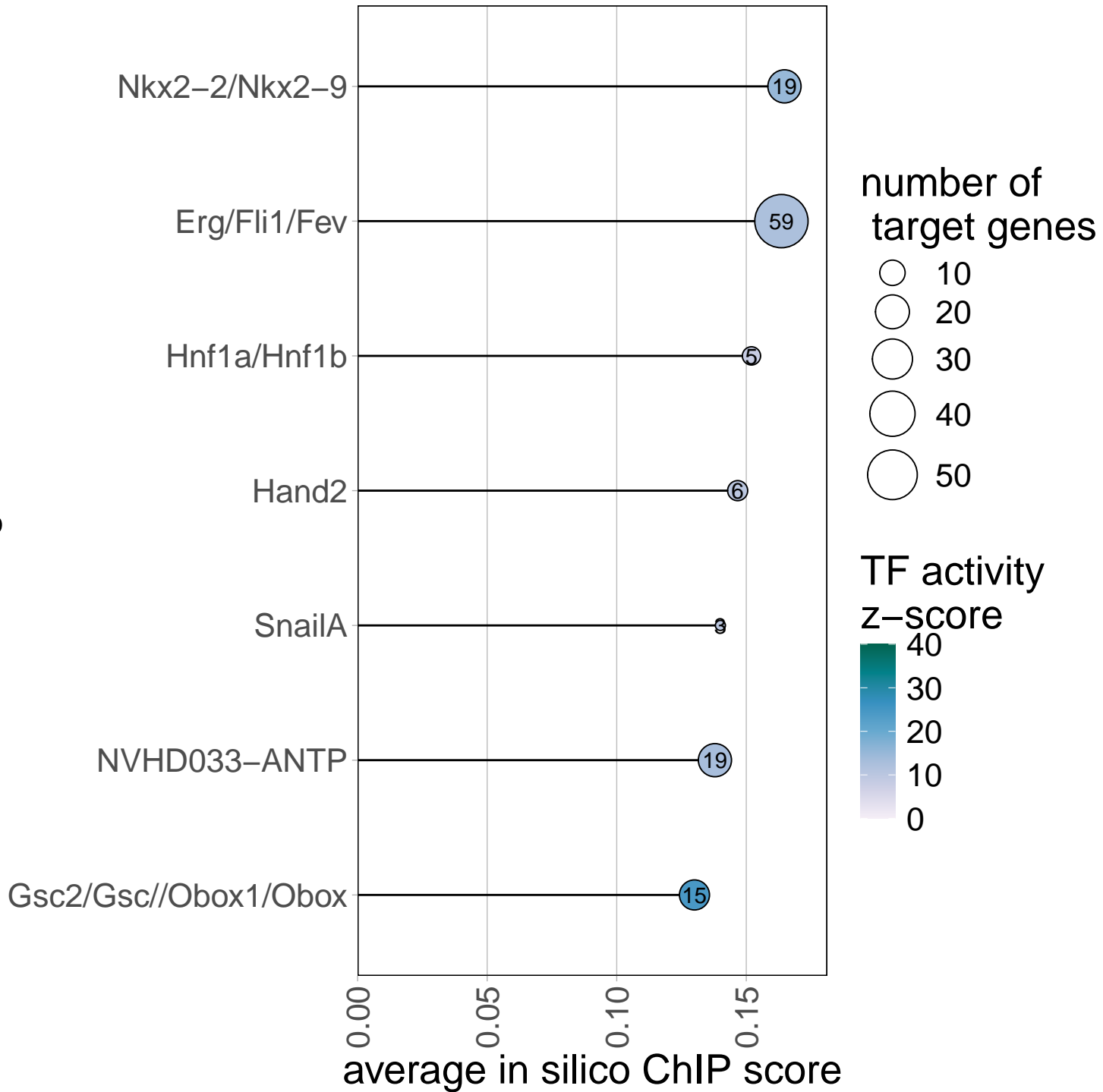
ecto_aboral_module_5

gene



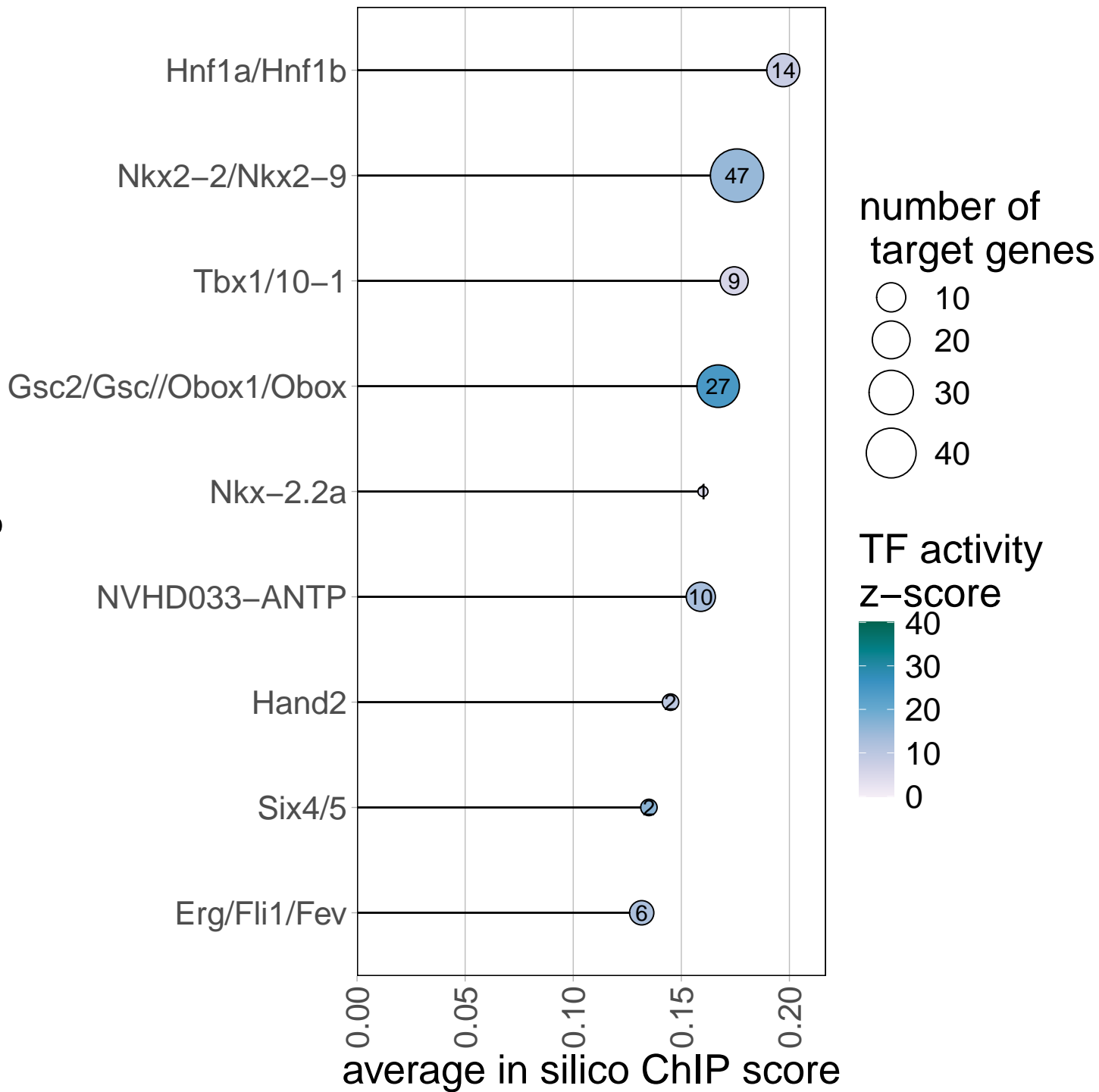
EMS_module_1

gene



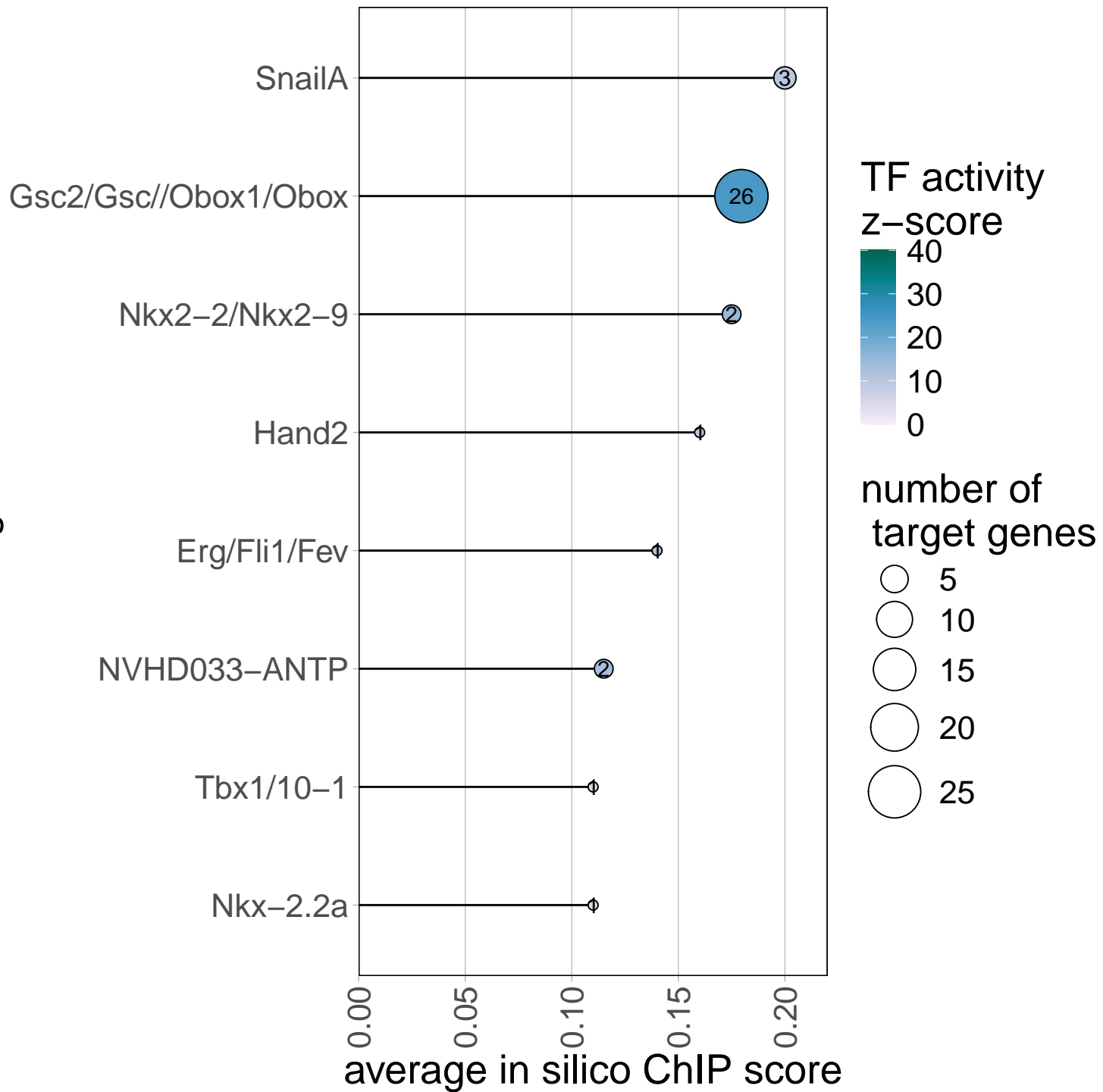
EMS_module_2

gene



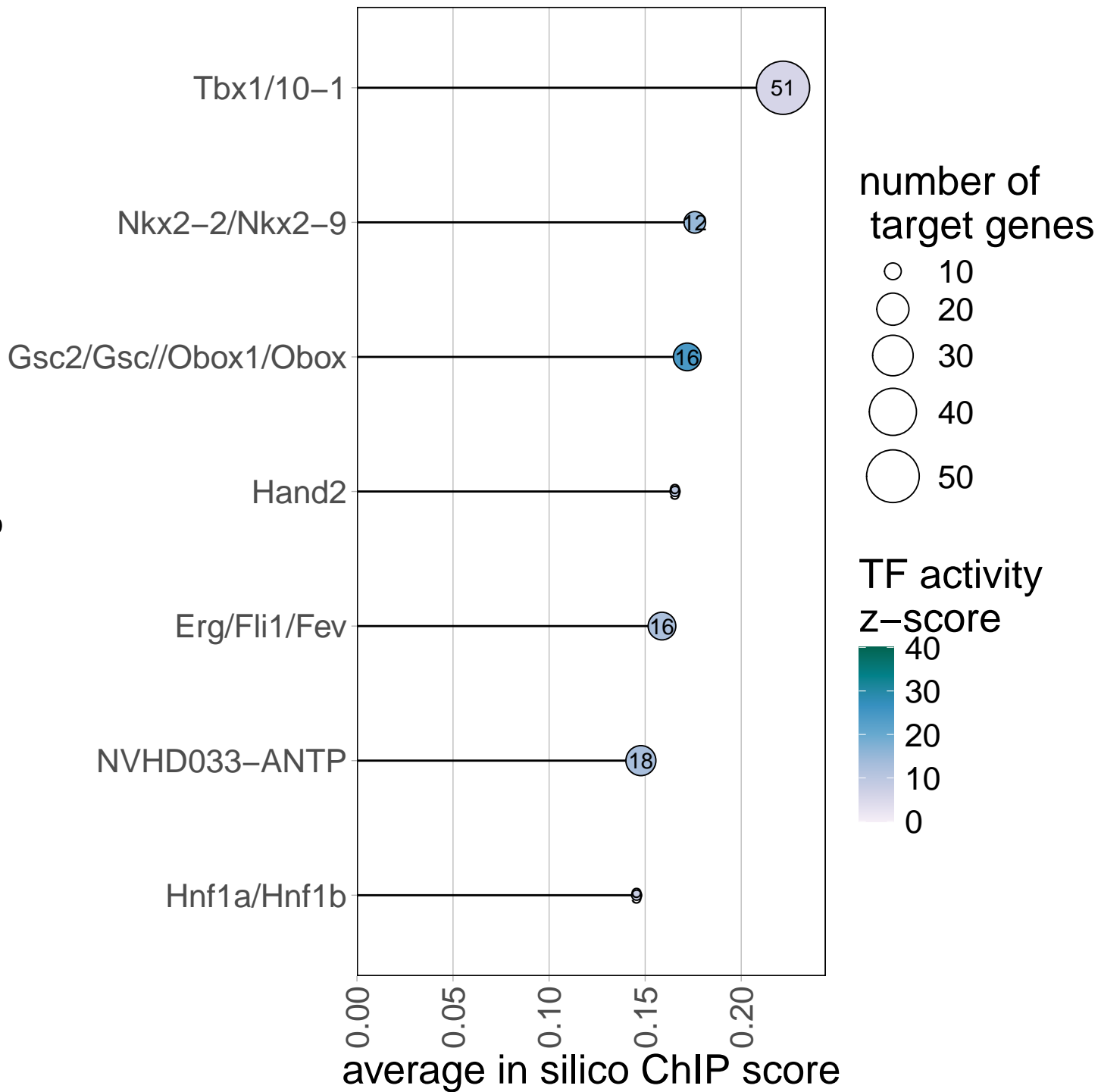
EMS_module_3

gene



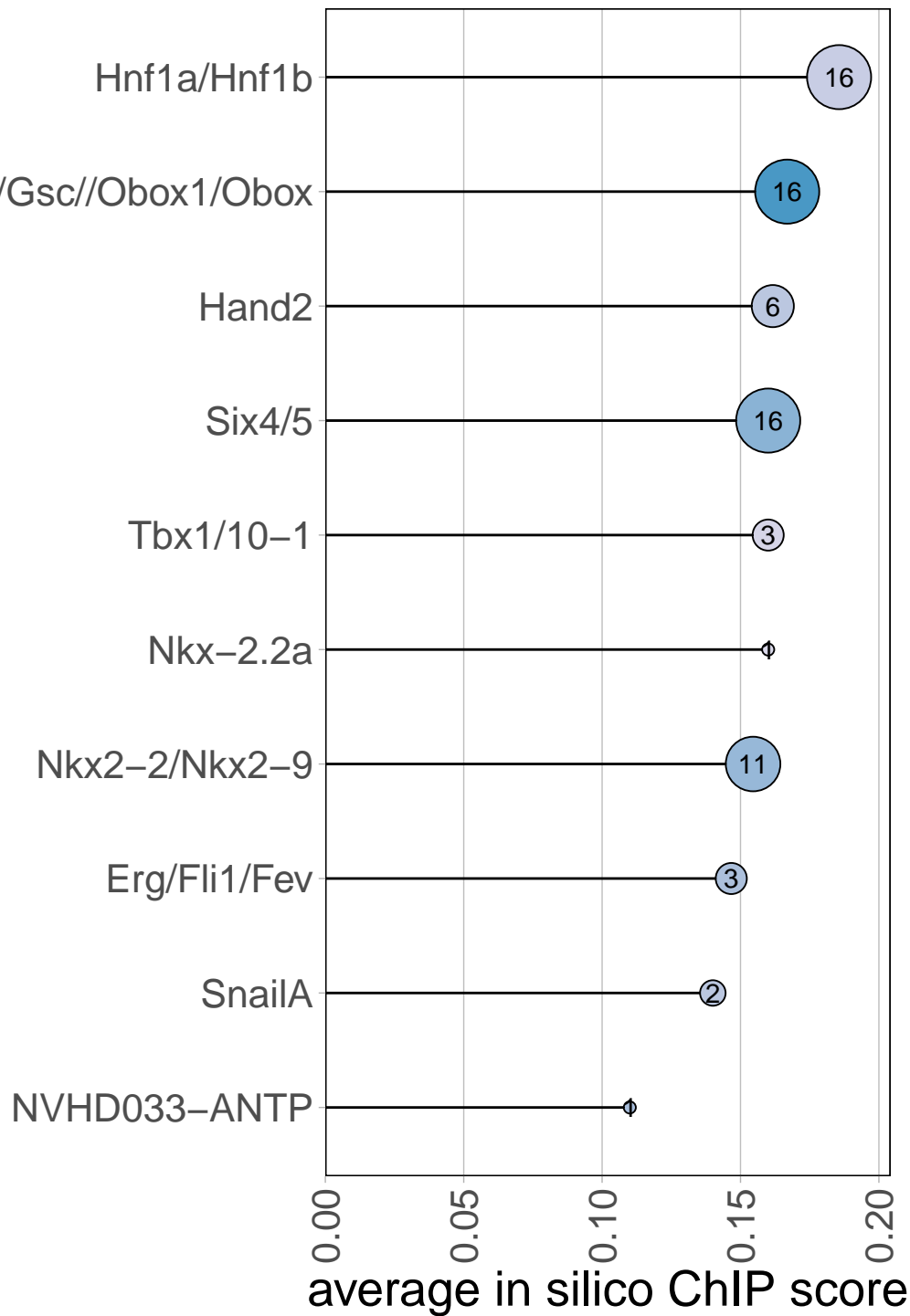
EMS_module_4

gene

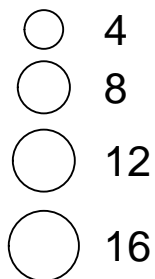


EMS_module_5

gene

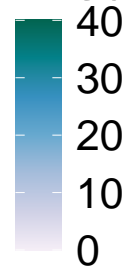


number of target genes



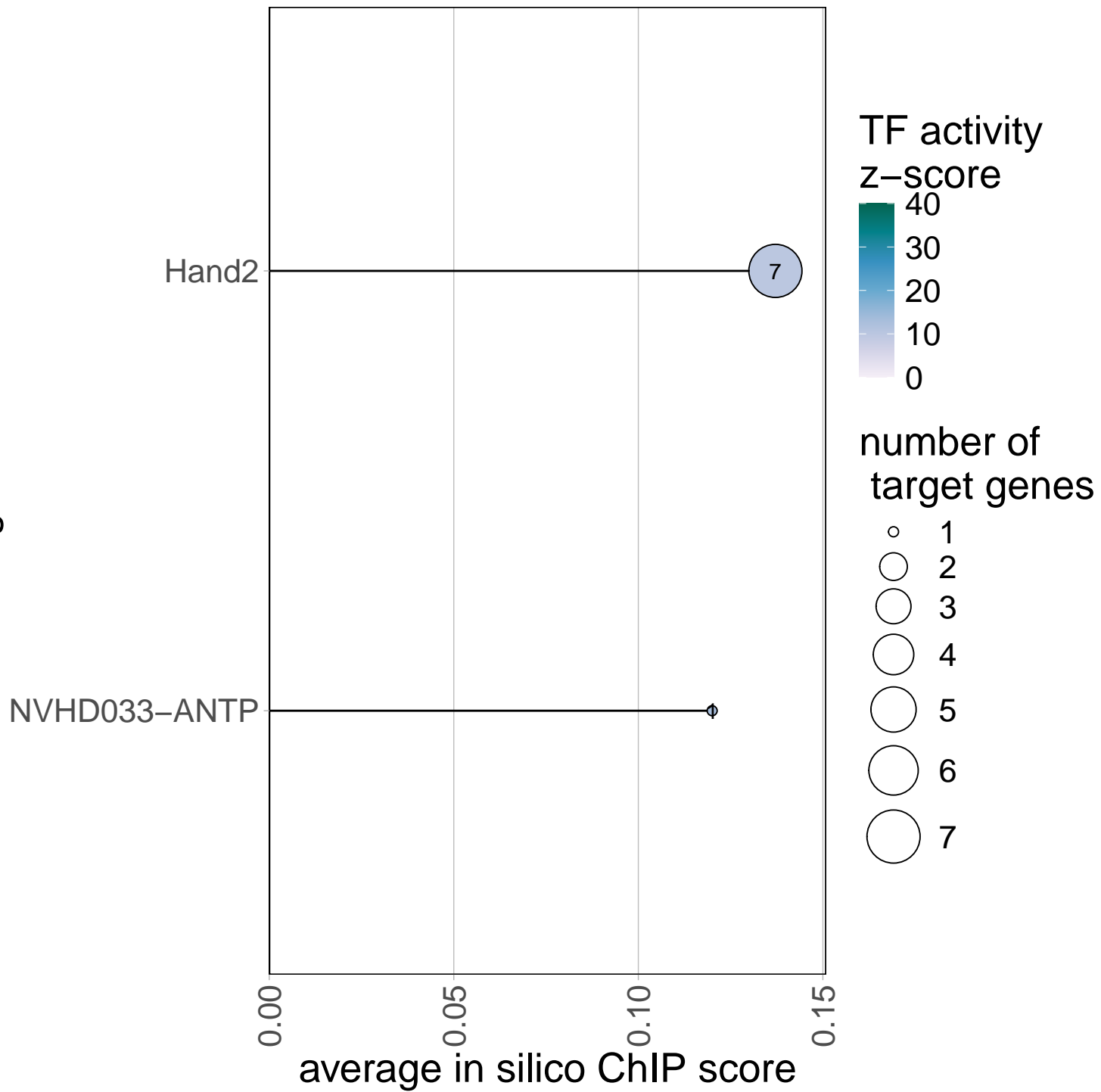
TF activity

z-score



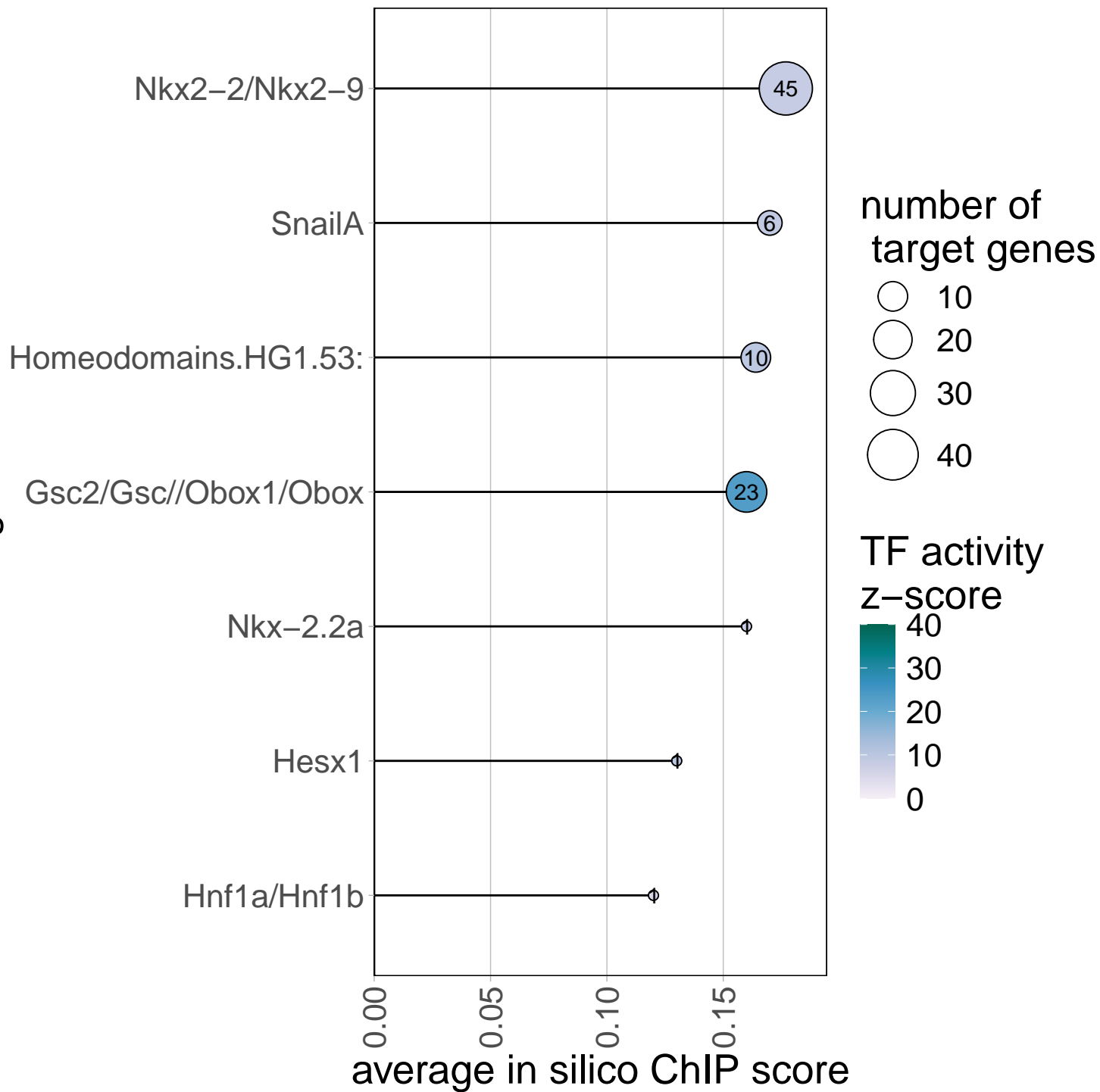
EMS_module_6

gene



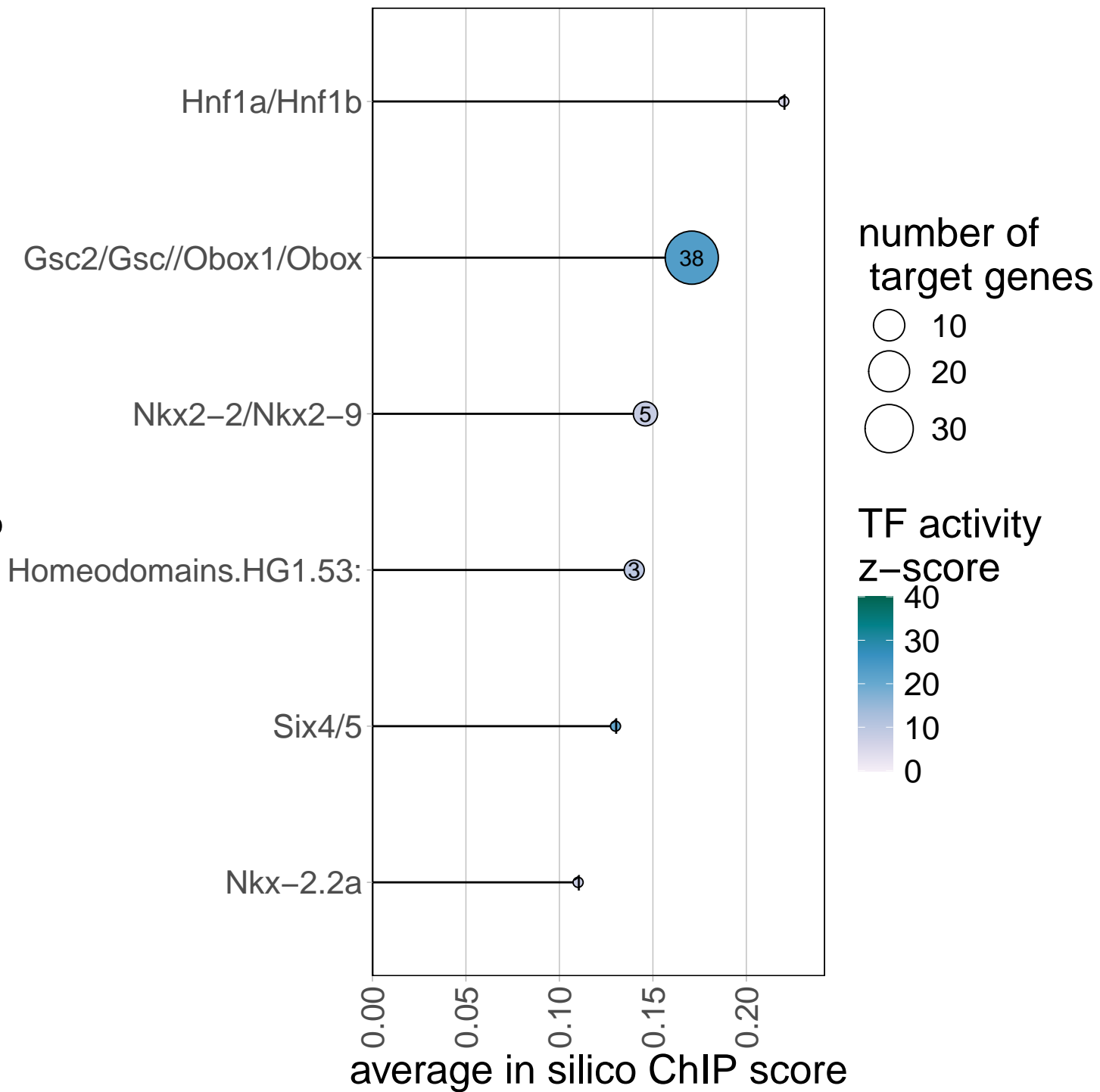
EMS_ecto_boundary_module_1

gene



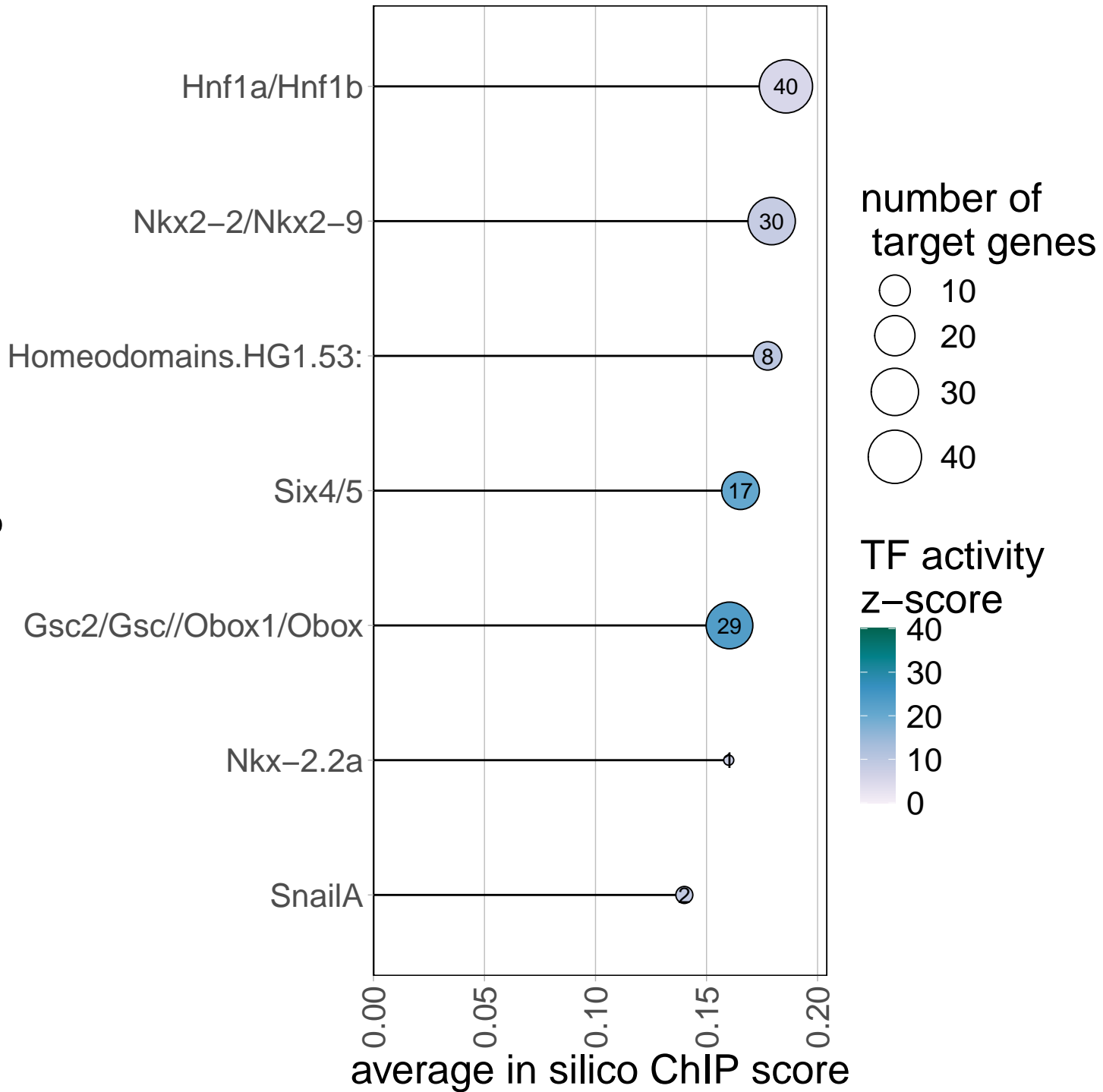
EMS_ecto_boundary_module_2

gene



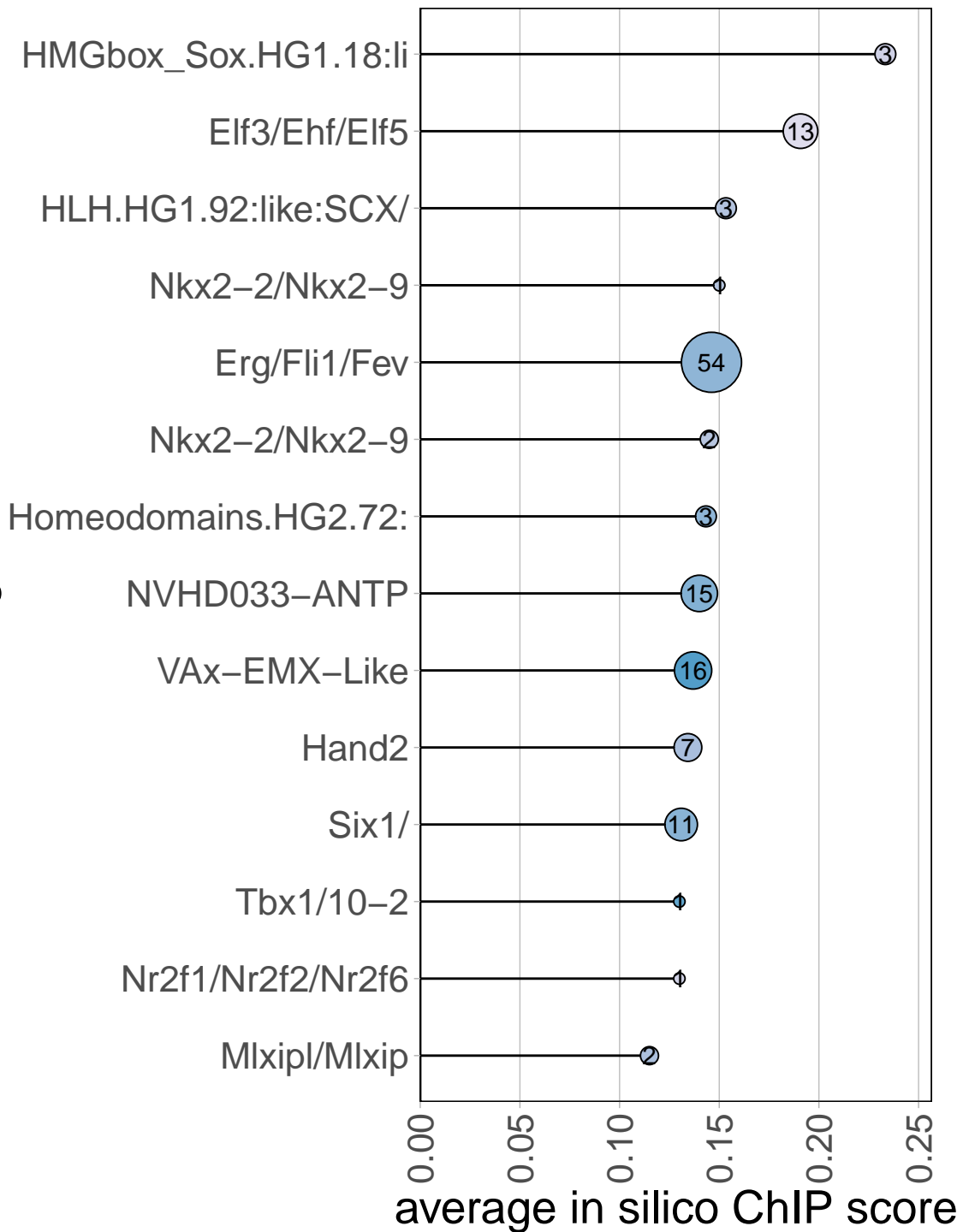
EMS_ecto_boundary_module_3

gene

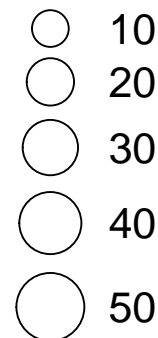


gastro_circular_muscle_1_module

gene



number of target genes

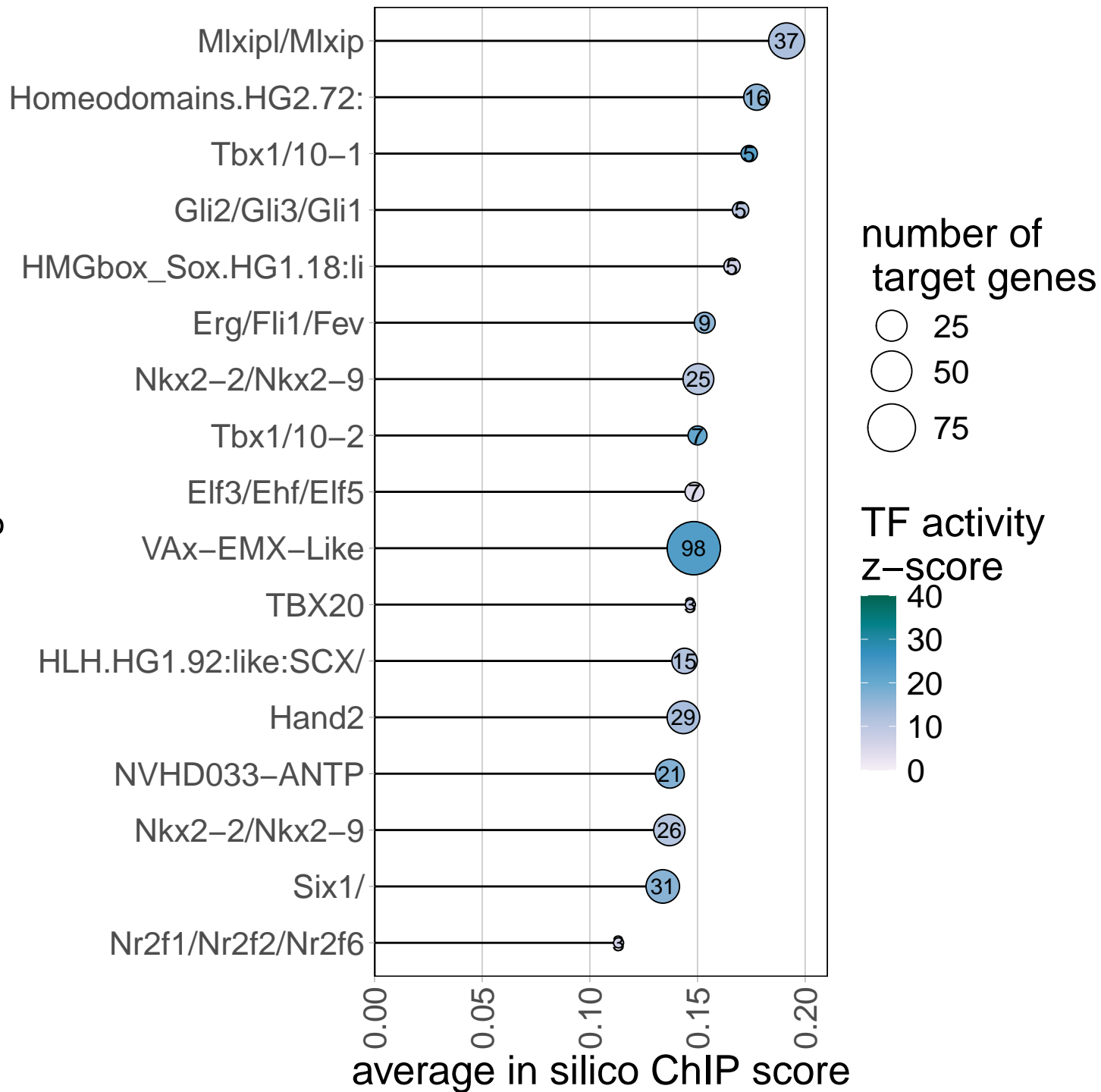


TF activity z-score



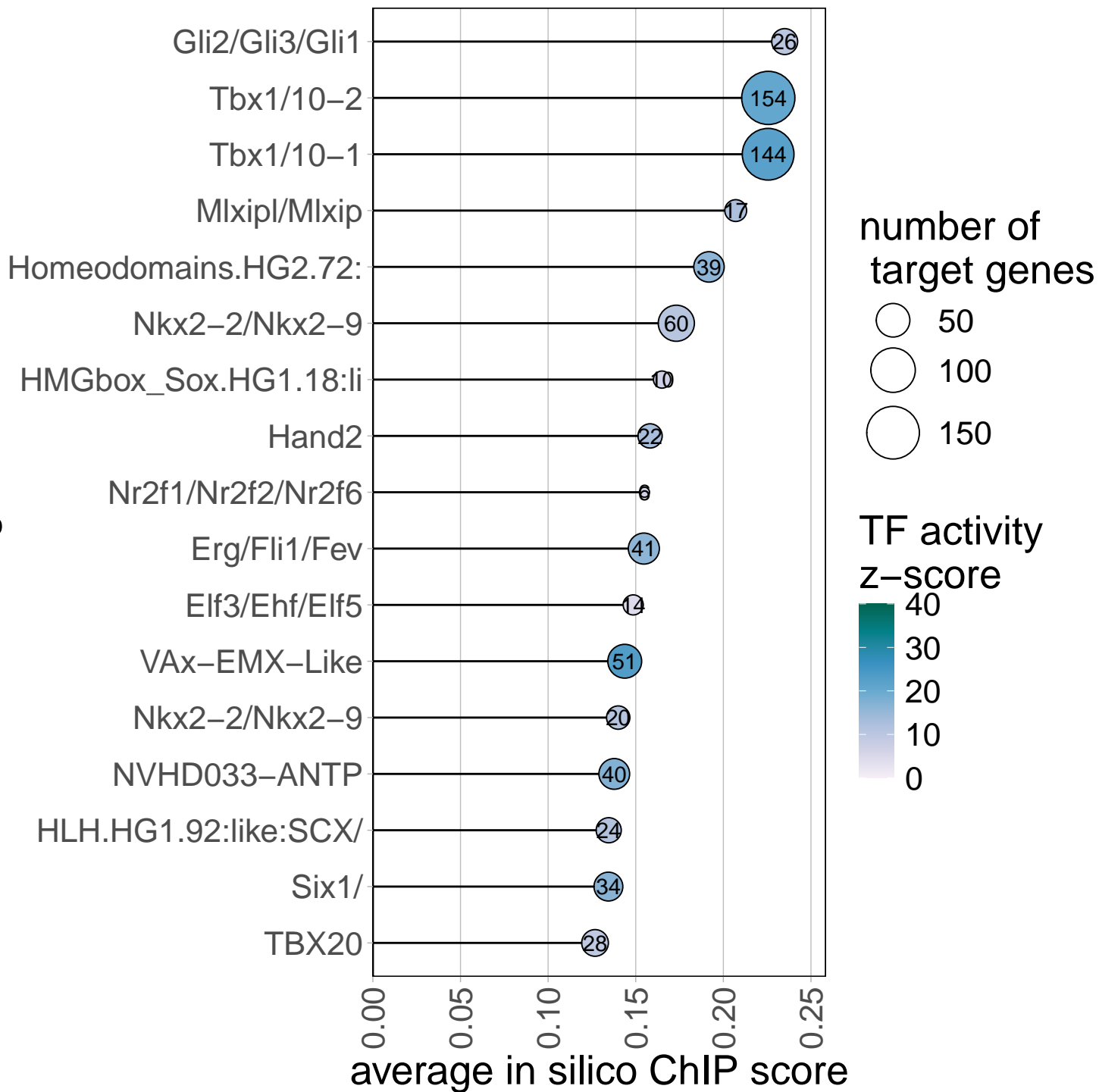
gastro_circular_muscle_1_module

gene



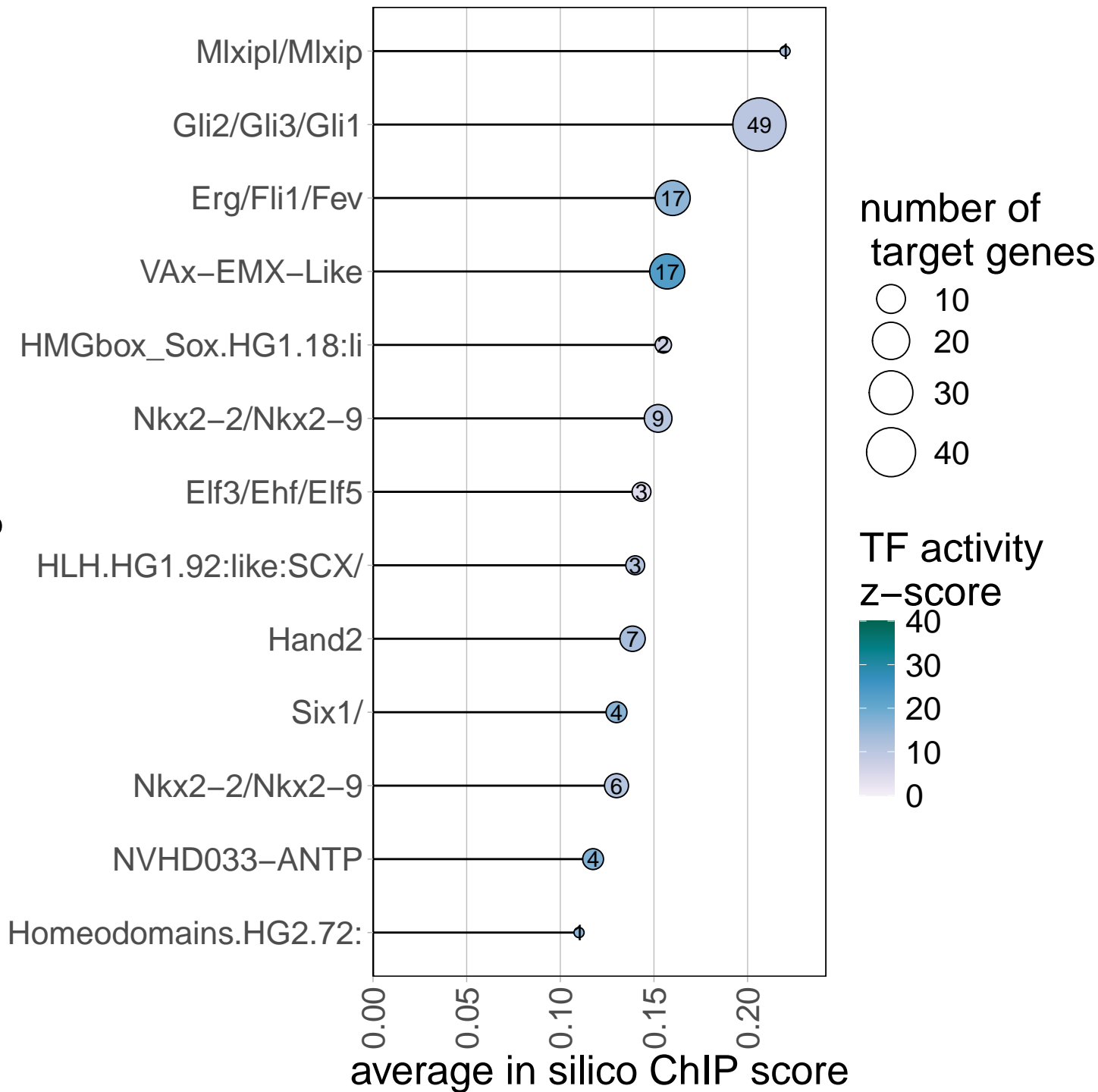
gastro_circular_muscle_1_module

gene



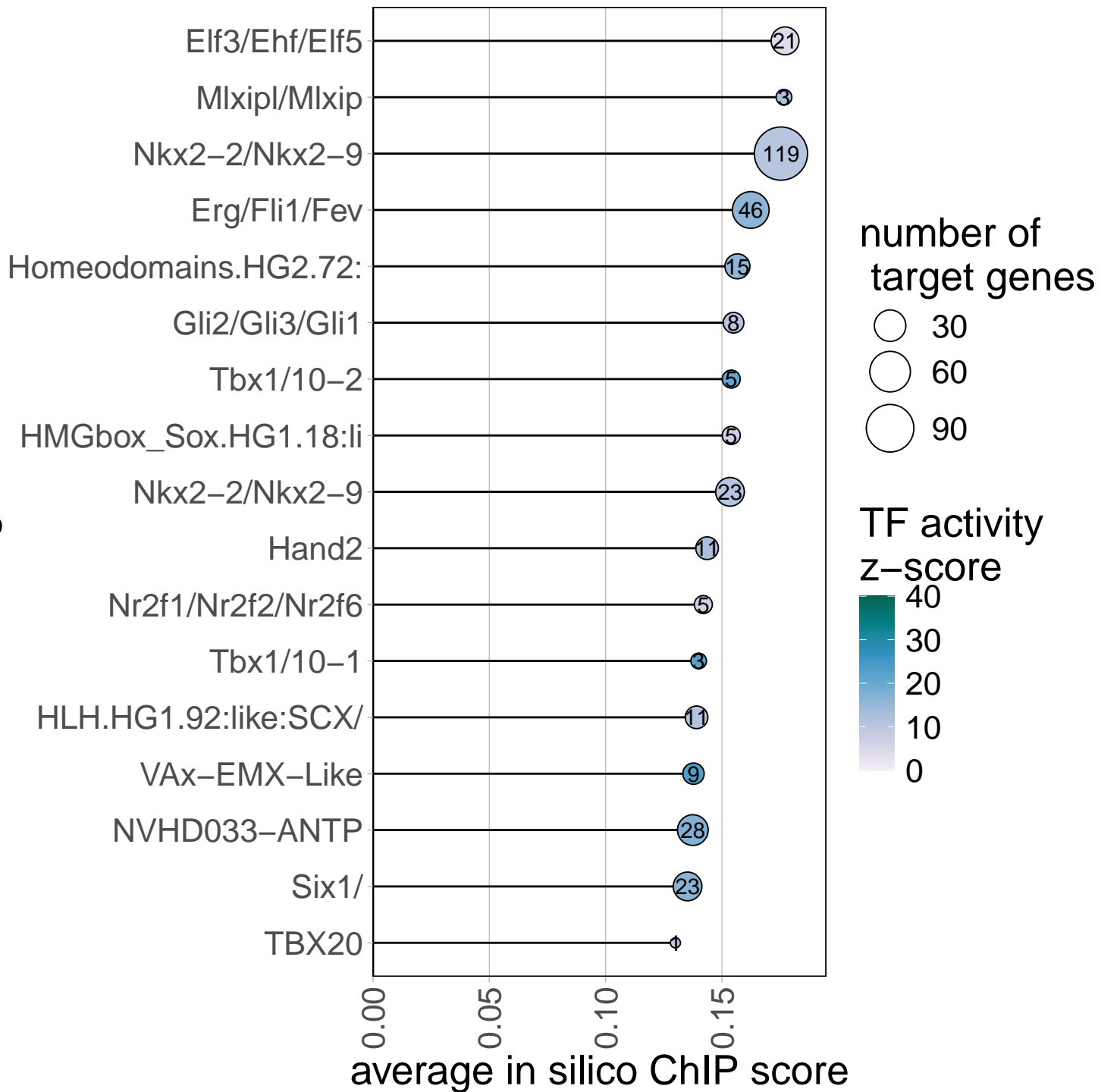
gastro_circular_muscle_1_module

gene



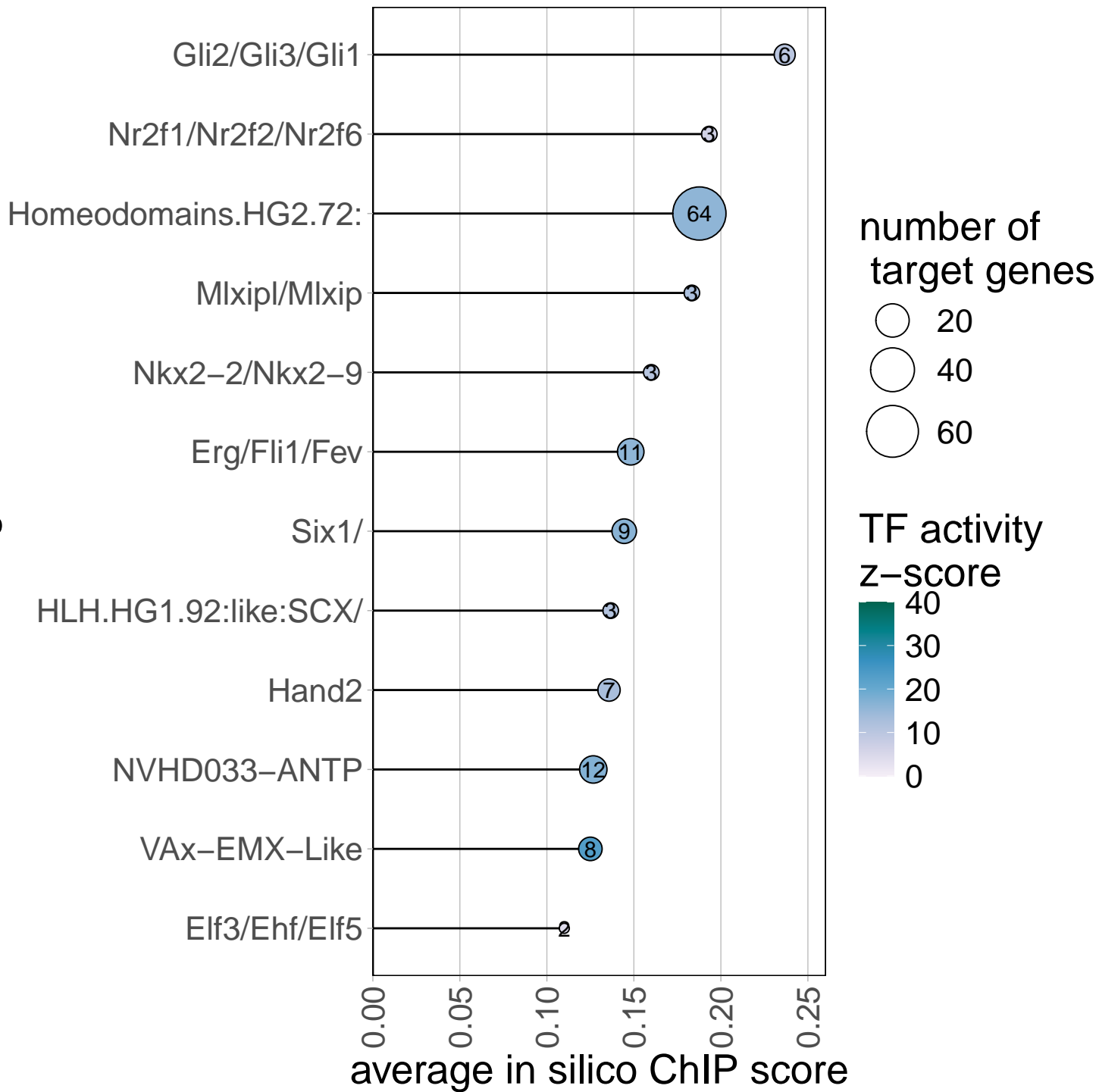
gastro_circular_muscle_1_module

gene



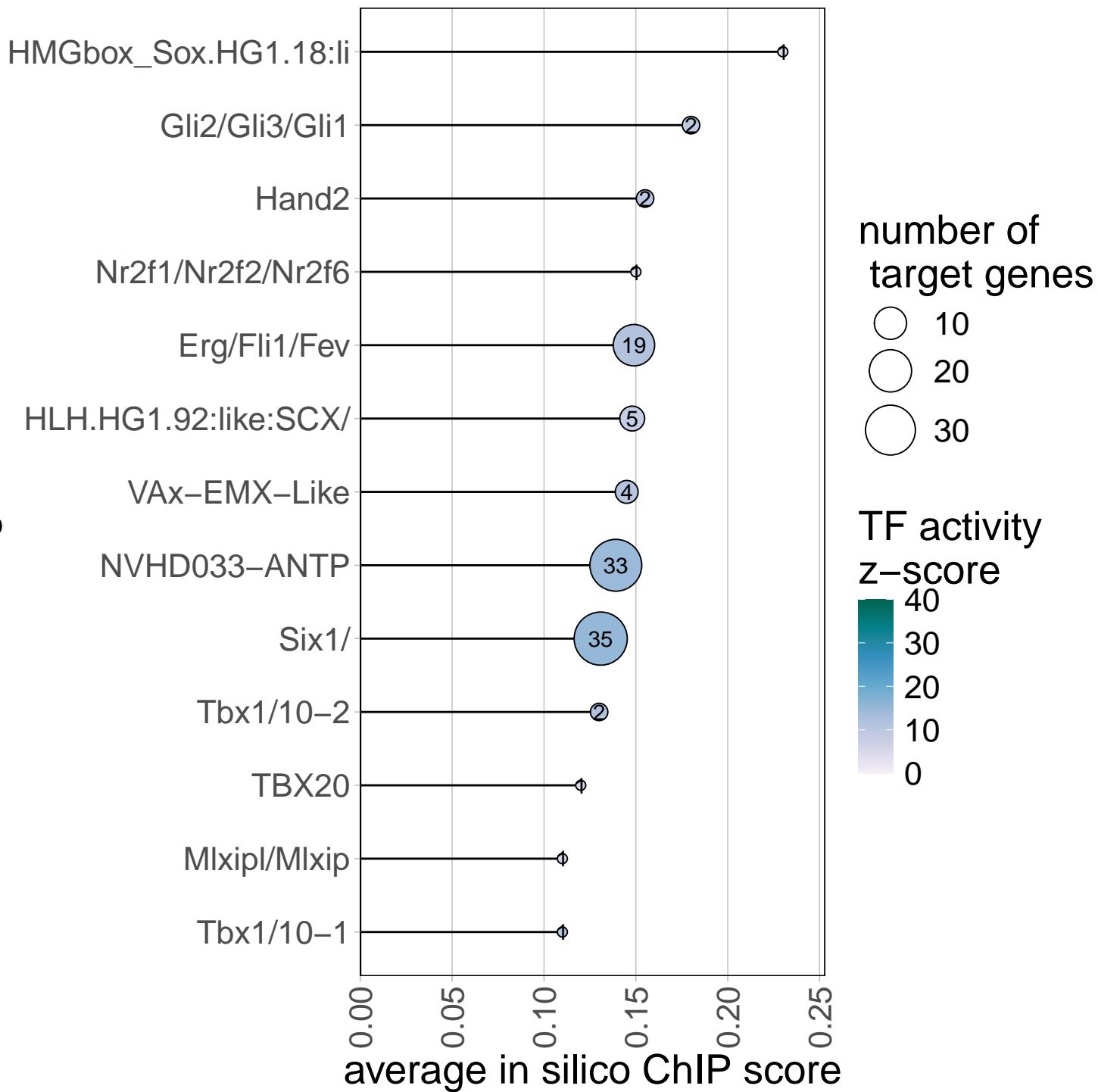
gastro_circular_muscle_1_module

gene



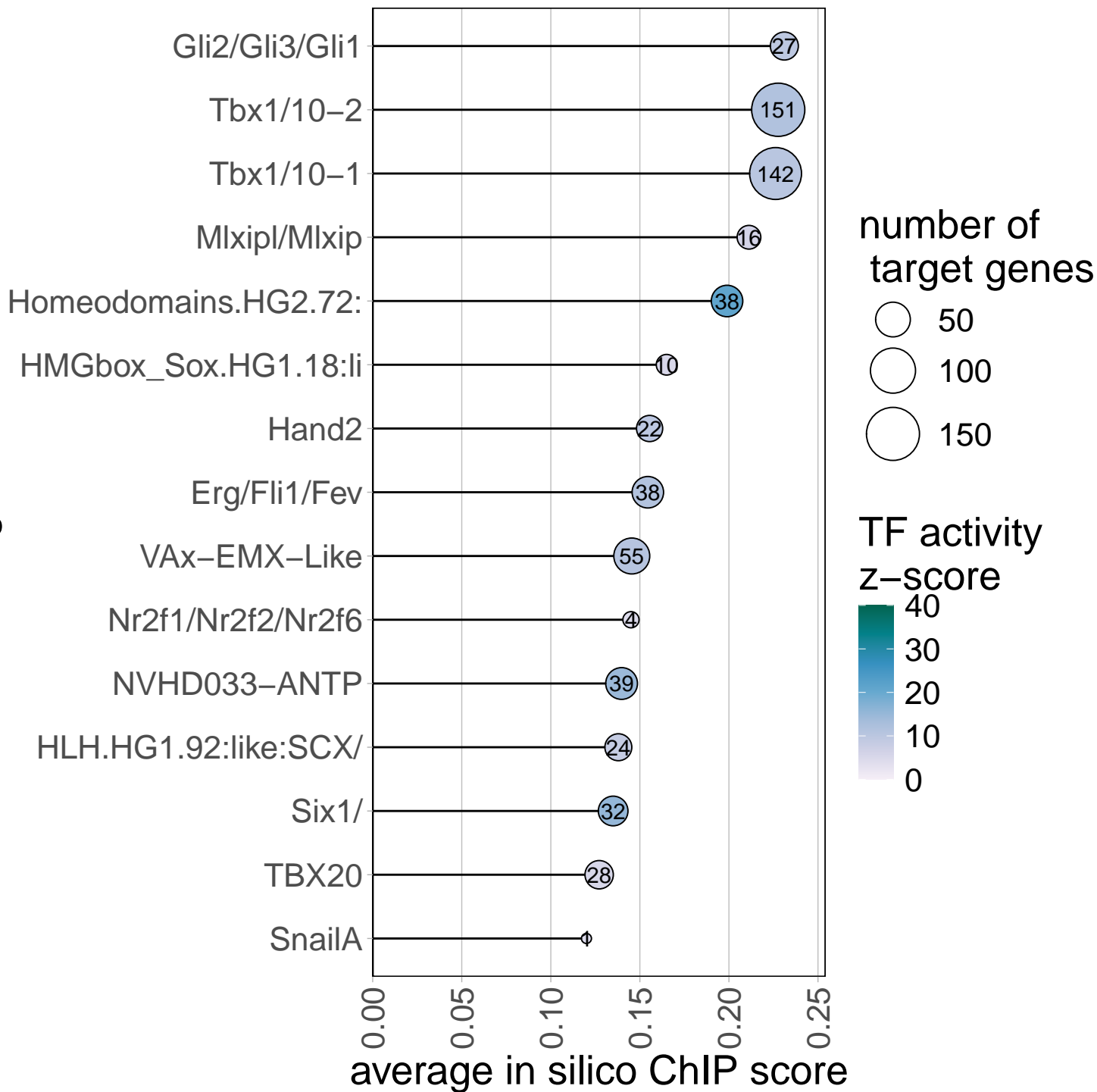
gastro_circular_muscle_2_module_

gene



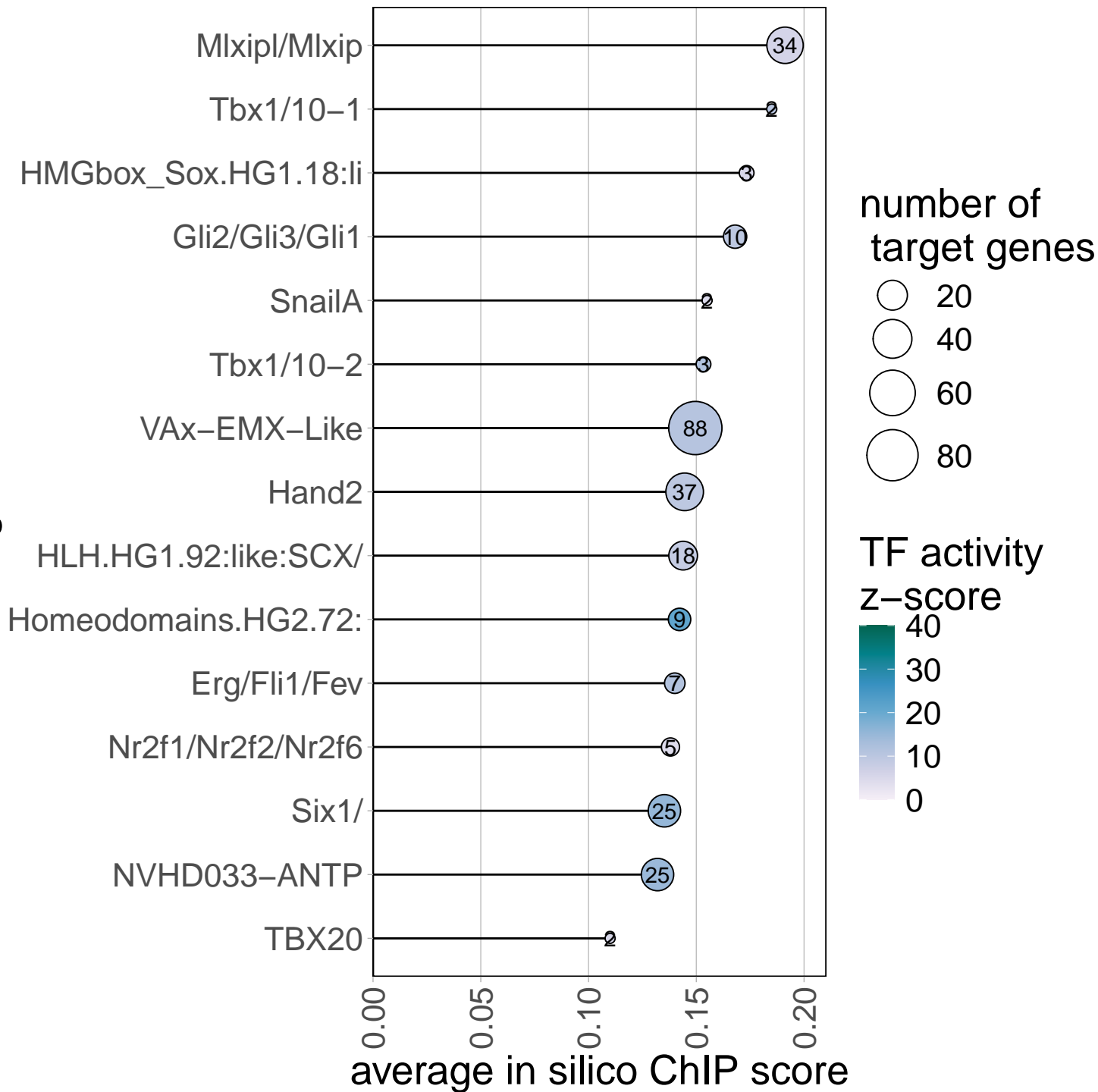
gastro_circular_muscle_2_module

gene



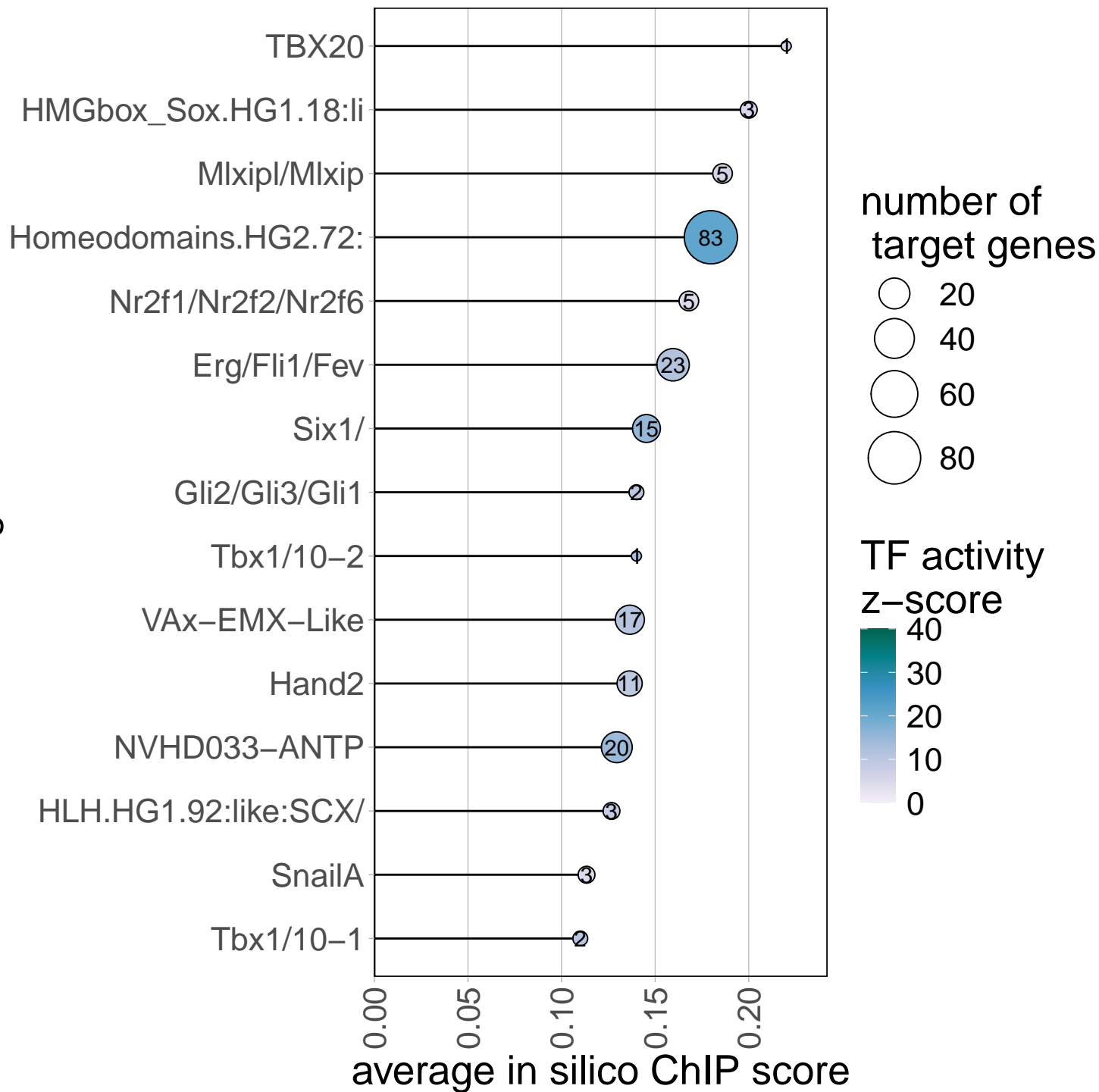
gastro_circular_muscle_2_module

gene



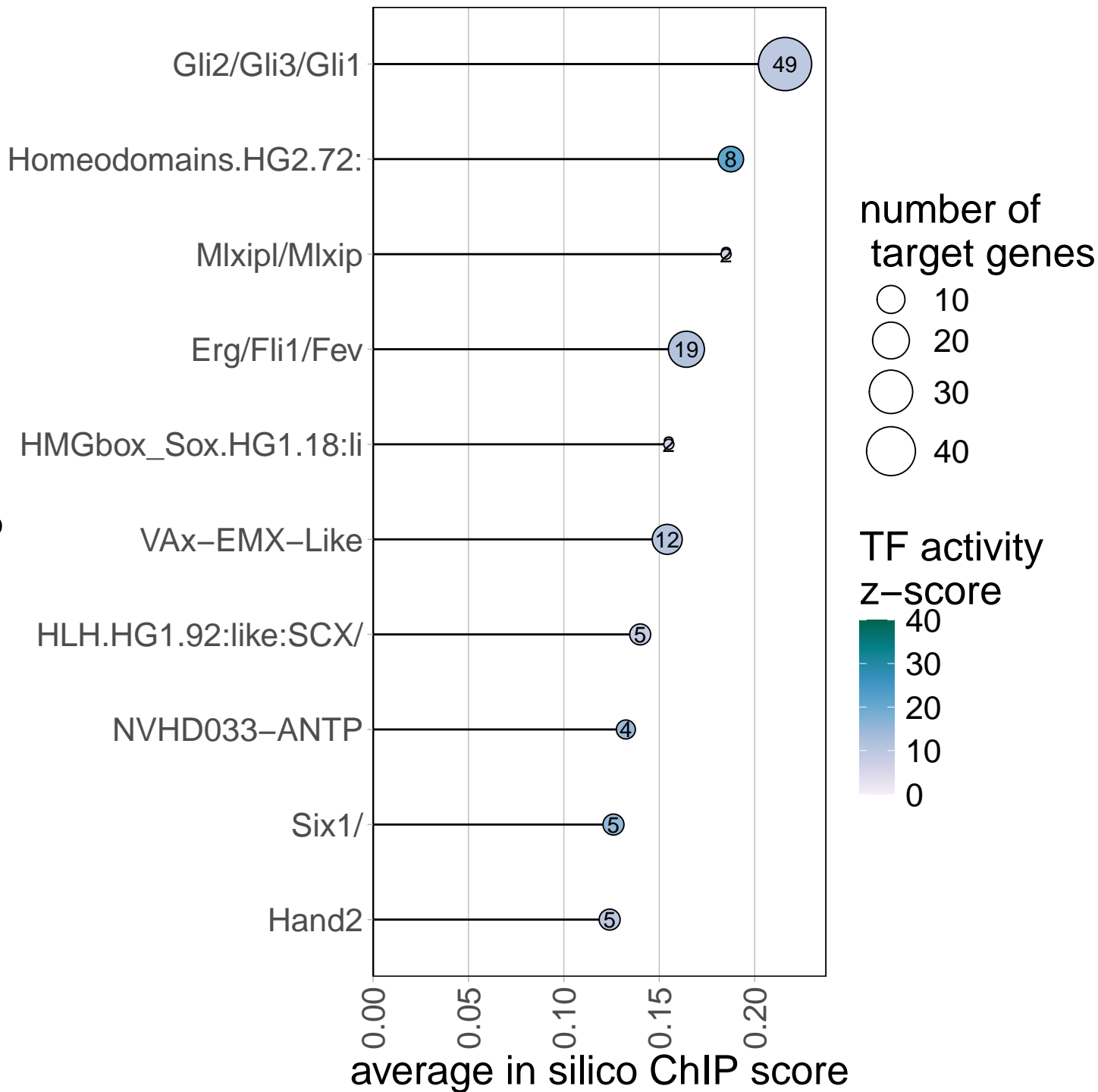
gastro_circular_muscle_2_module

gene



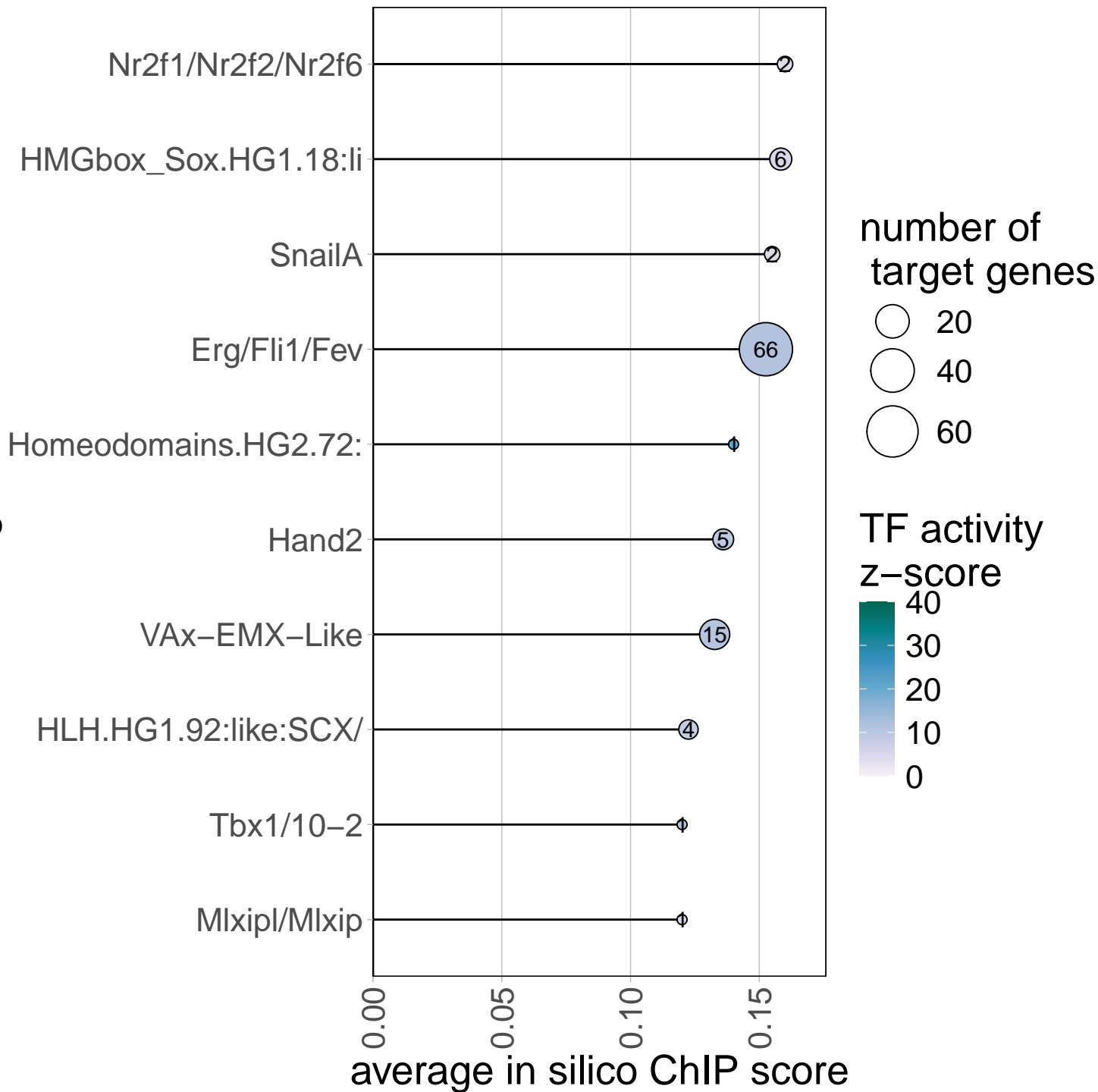
gastro_circular_muscle_2_module

gene



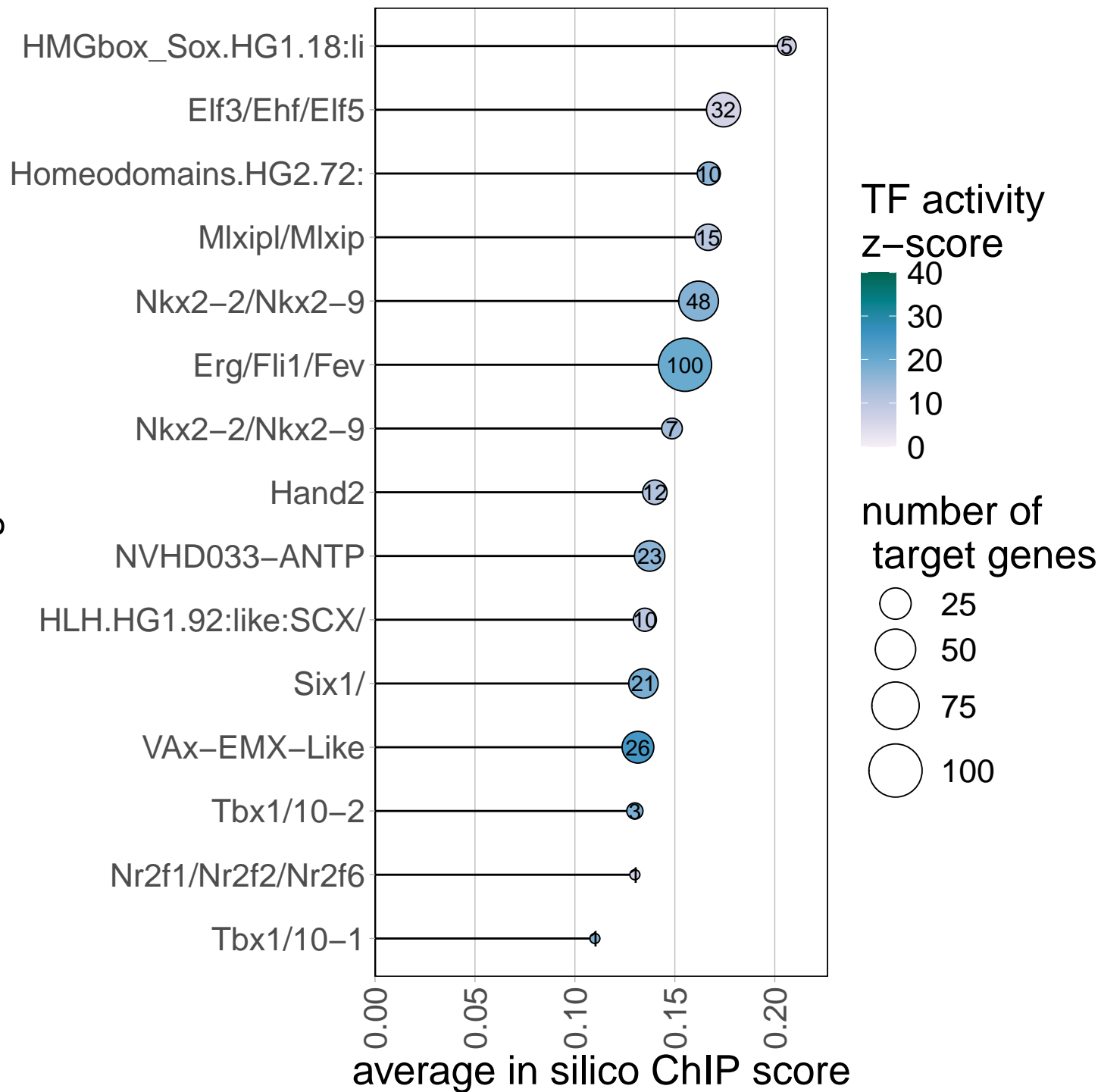
gastro_circular_muscle_2_module

gene



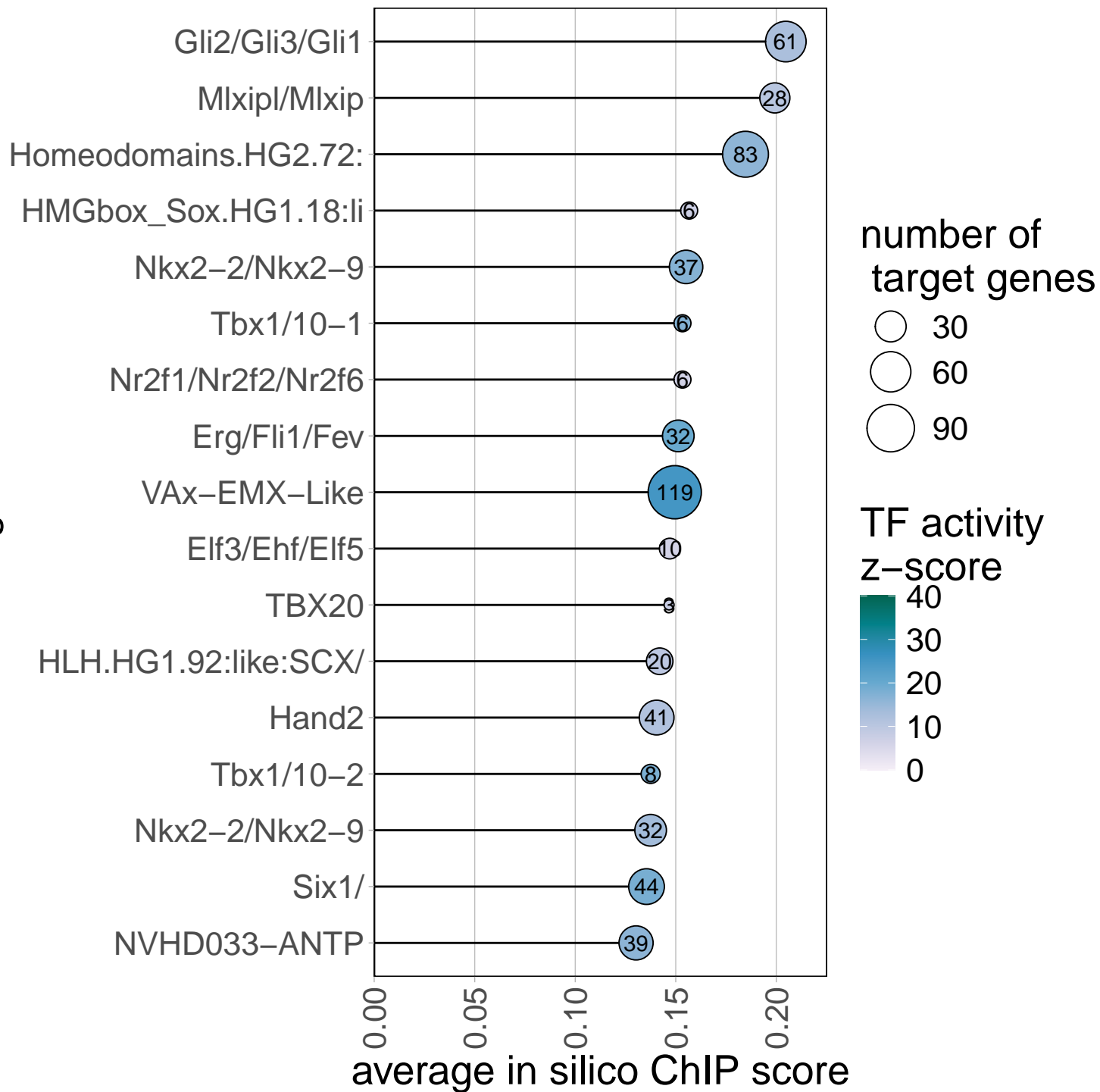
gastro_parietal_muscle_module_1

gene



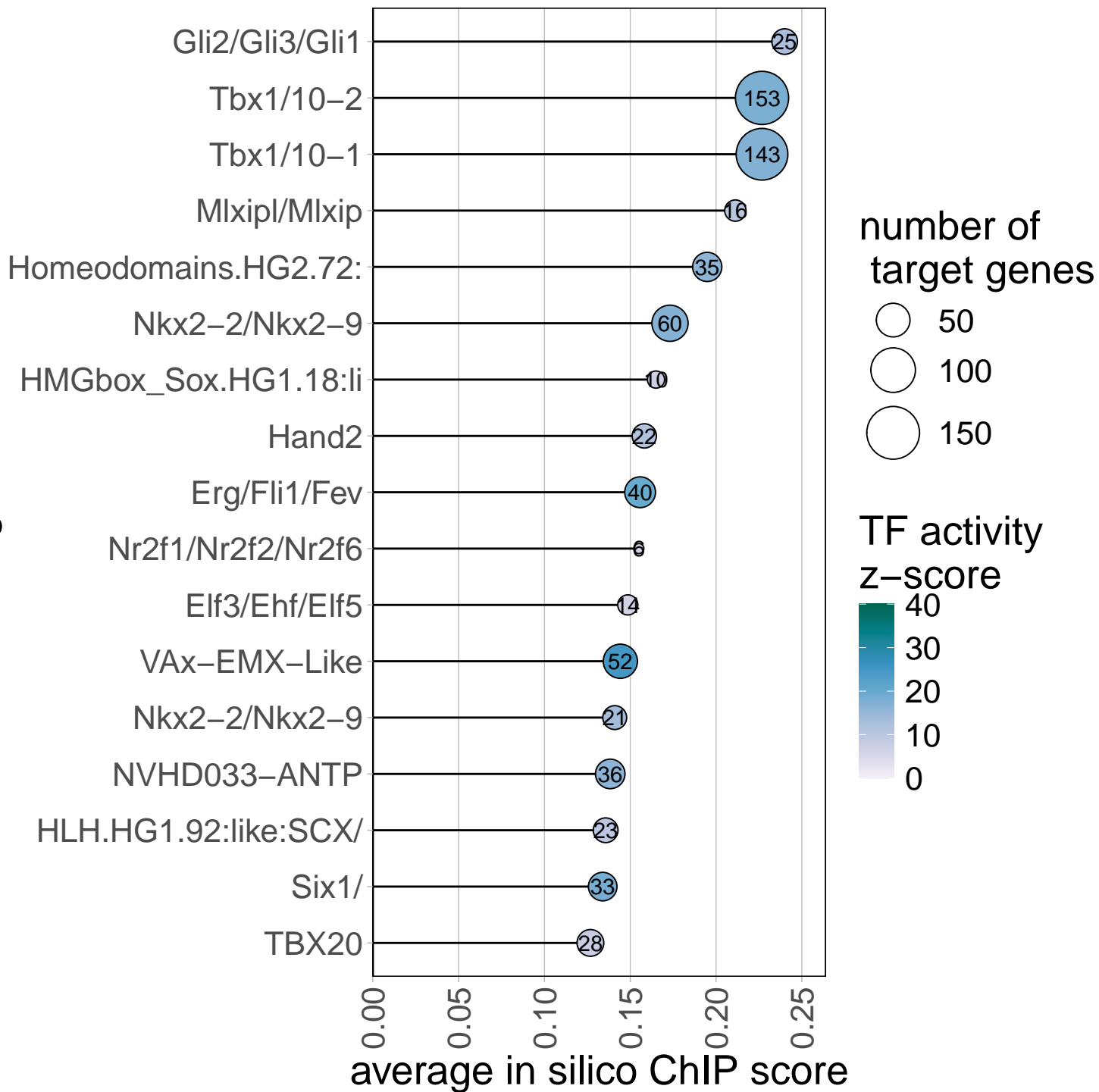
gastro_parietal_muscle_module_2

gene



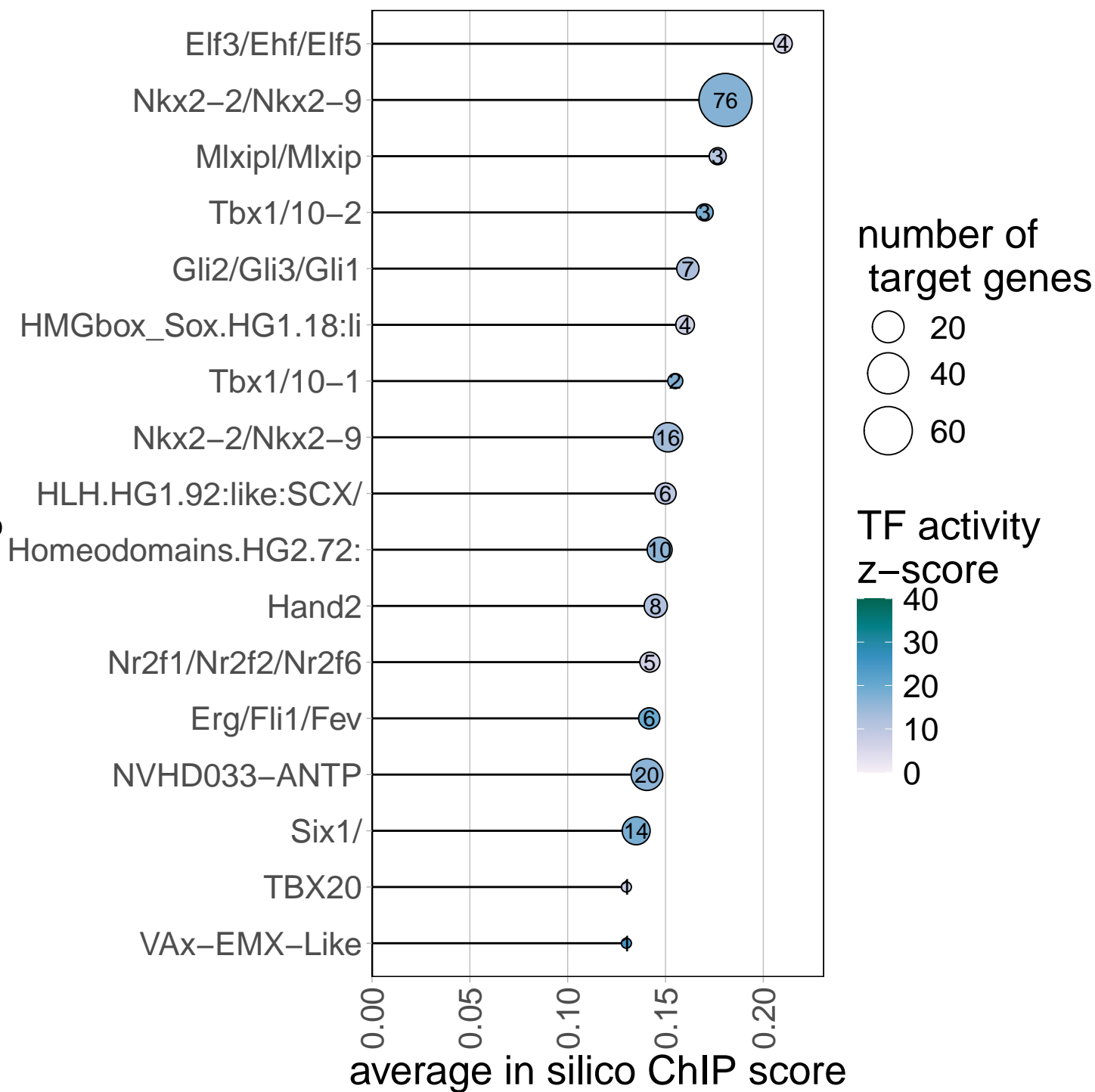
gastro_parietal_muscle_module_3

gene



gastro_parietal_muscle_module_4

gene



gastro_IRF1_2_module_1

gene

Erg/Fli1/Fev

Spdef

Irf7/Irf4/Irf8/Irf5/

0.00

0.04

0.08

0.12

0.16

average in silico ChIP score

number of
target genes

○ 30

○ 60

○ 90

○ 120

TF activity

z-score

40

30

20

10

0

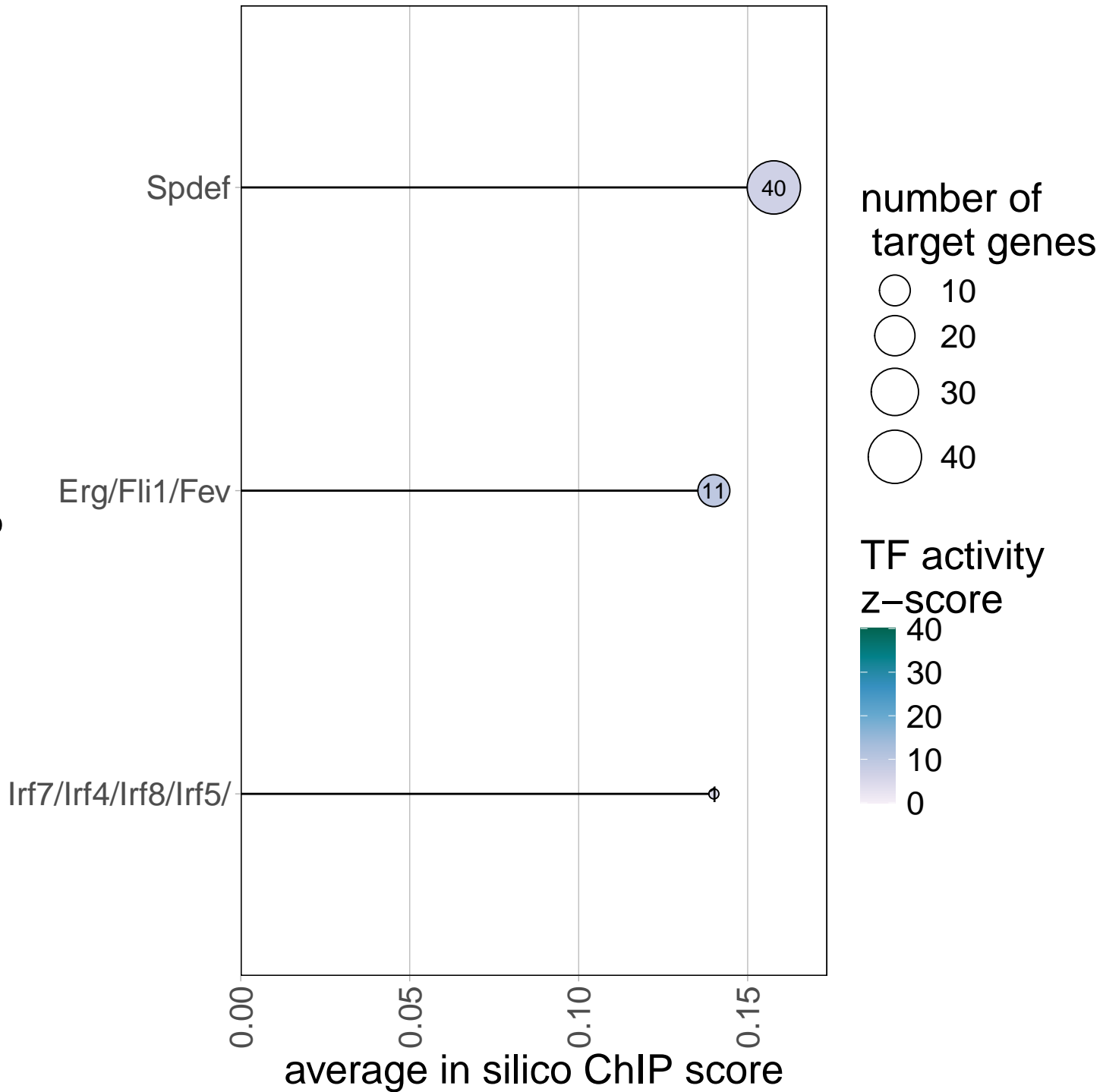
121

4

0

gastro_IRF1_2_module_2

gene



gastro_IRF1_2_module_3

gene

IRF.HG1.1:IRF1/IRF2/

Spdef

Erg/Fli1/Fev

Irf7/Irf4/Irf8/Irf5/

number of
target genes

○ 10

○ 20

○ 30

TF activity

z-score

40

30

20

10

0

0.00

0.05

0.10

0.15

0.20

average in silico ChIP score

36

3

9

0

gastro_IRF1_2_module_4

gene

Irf7/Irf4/Irf8/Irf5/

IRF.HG1.1:IRF1/IRF2/

Spdef

0.00

0.05

0.10

0.15

average in silico ChIP score

23

number of
target genes

○ 5

○ 10

○ 15

○ 20

TF activity

z-score

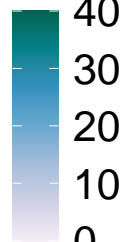
40

30

20

10

0



muscle_tentacle_retractor_module_1

gene

zf-C2H2.HG1.24:like:

FoxL2

zf-C2H2.HG4.4:like:Z

Zic-C

Mlx

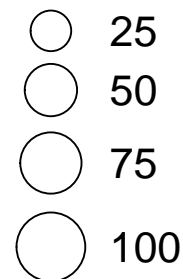
NvSoxE1

TF activity

z-score



number of target genes



0.00 0.05 0.10 0.15 0.20 0.25

average in silico ChIP score

105

9

8

2

0

muscle_tentacle_retractor_module_2

gene

zf-C2H2.HG4.4:like:Z

Zic-C

FoxL2

Mlx

0.00

0.05

0.10

0.15

average in silico ChIP score

number of
target genes

○ 10

○ 20

○ 30

○ 40

TF activity

z-score

40

30

20

10

0

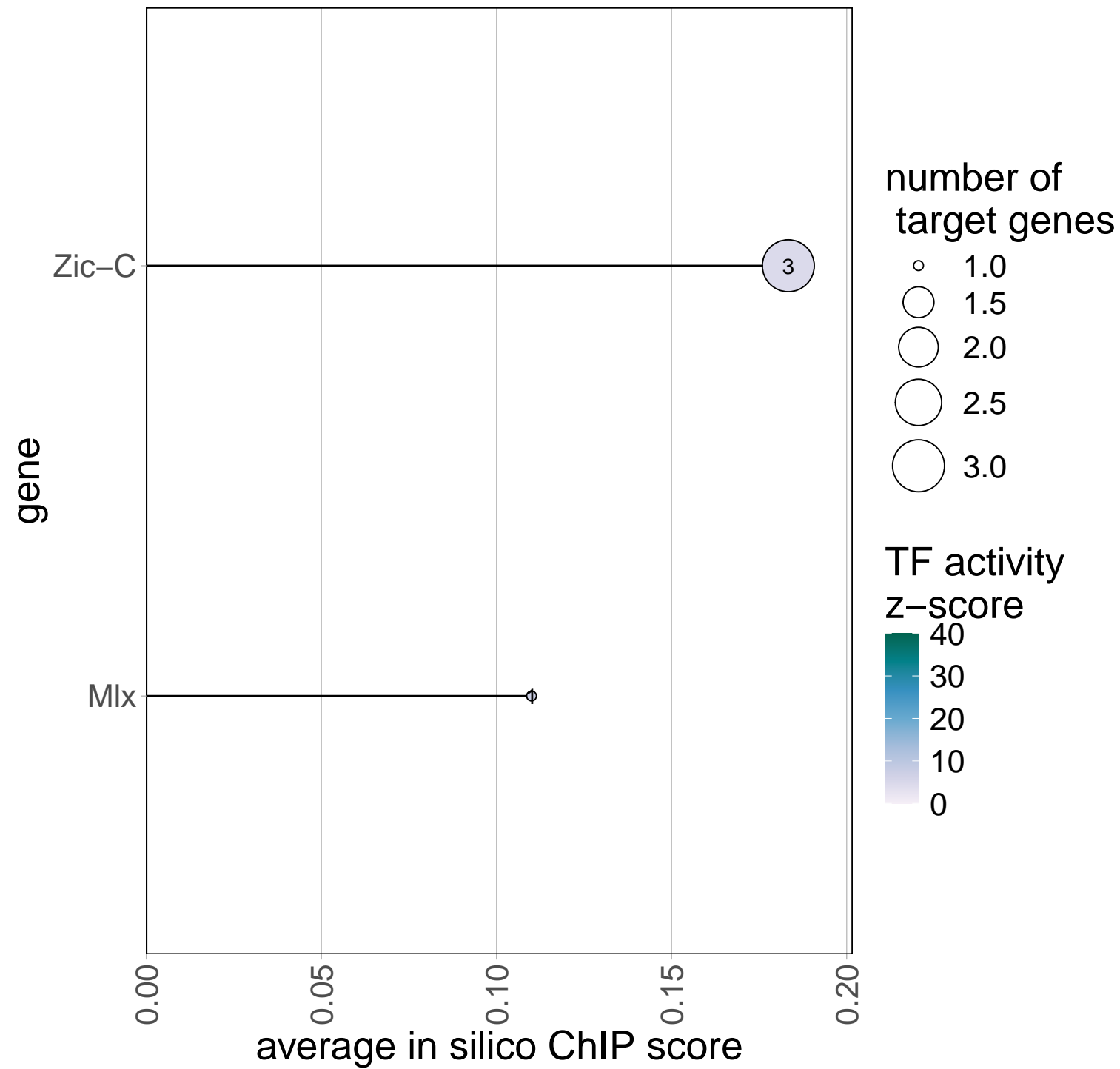
41

Φ

Φ

3

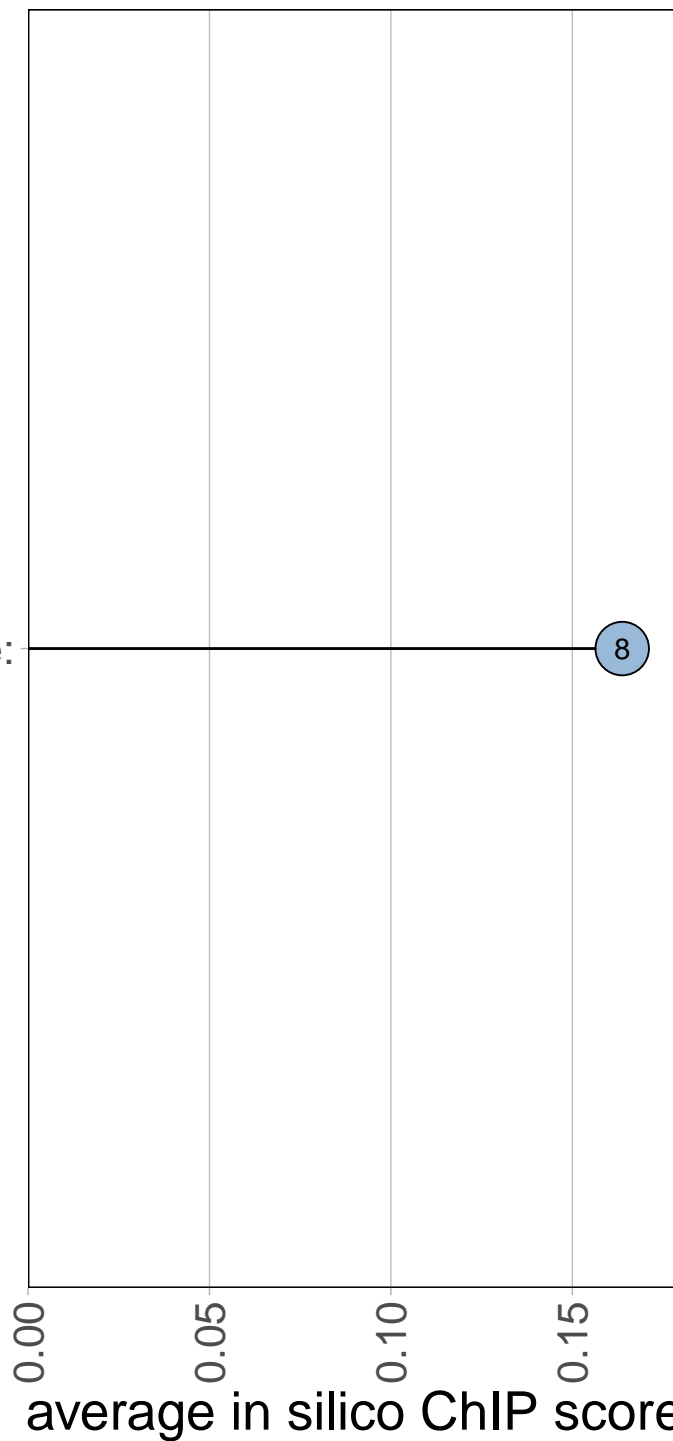
muscle_tentacle_retractor_module_3



muscle_tentacle_retractor_module_4

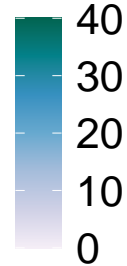
gene

zf-C2H2.HG1.24:like:



TF activity

z-score

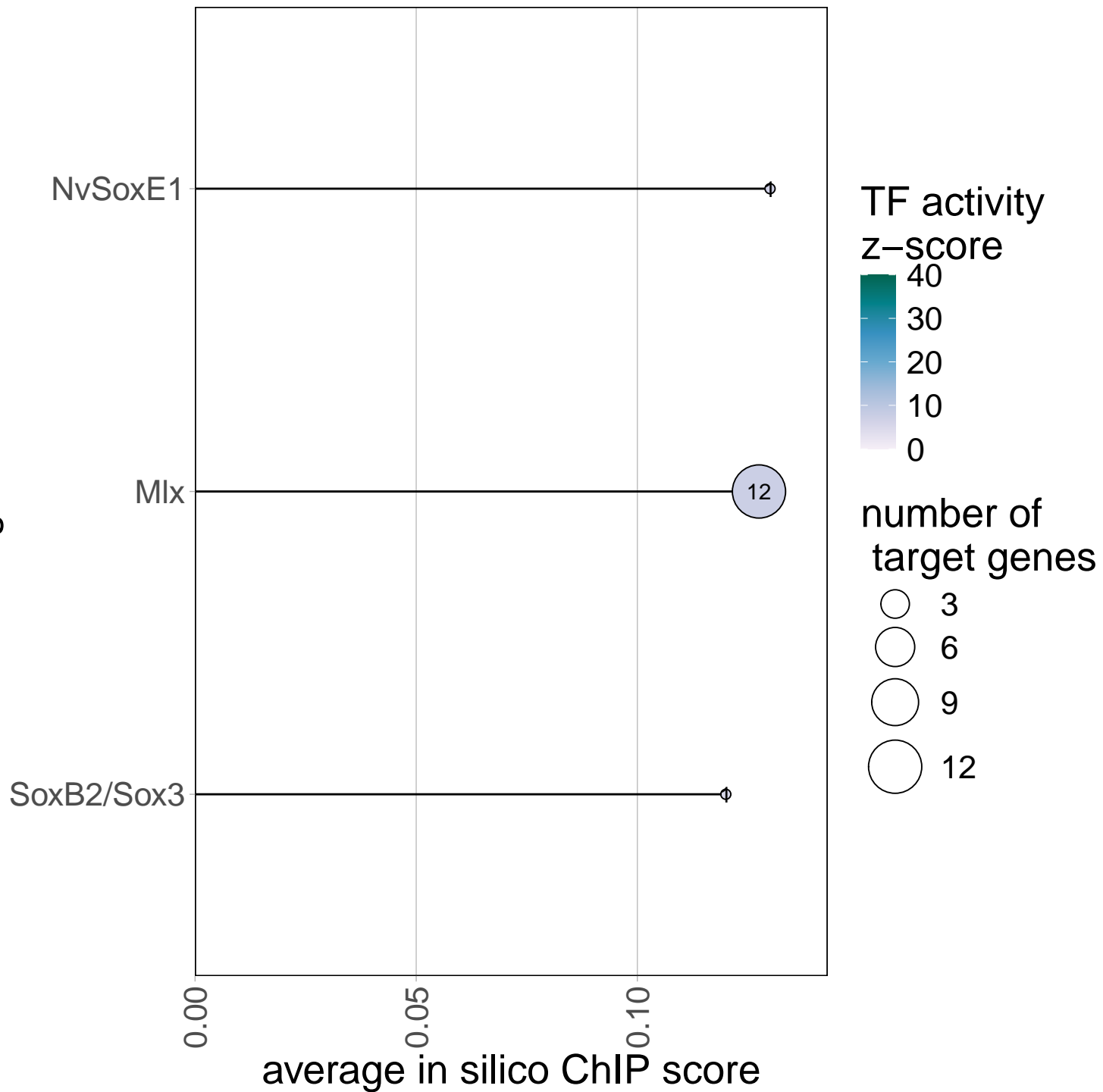


number of
target genes



muscle_tentacle_retractor_module_5

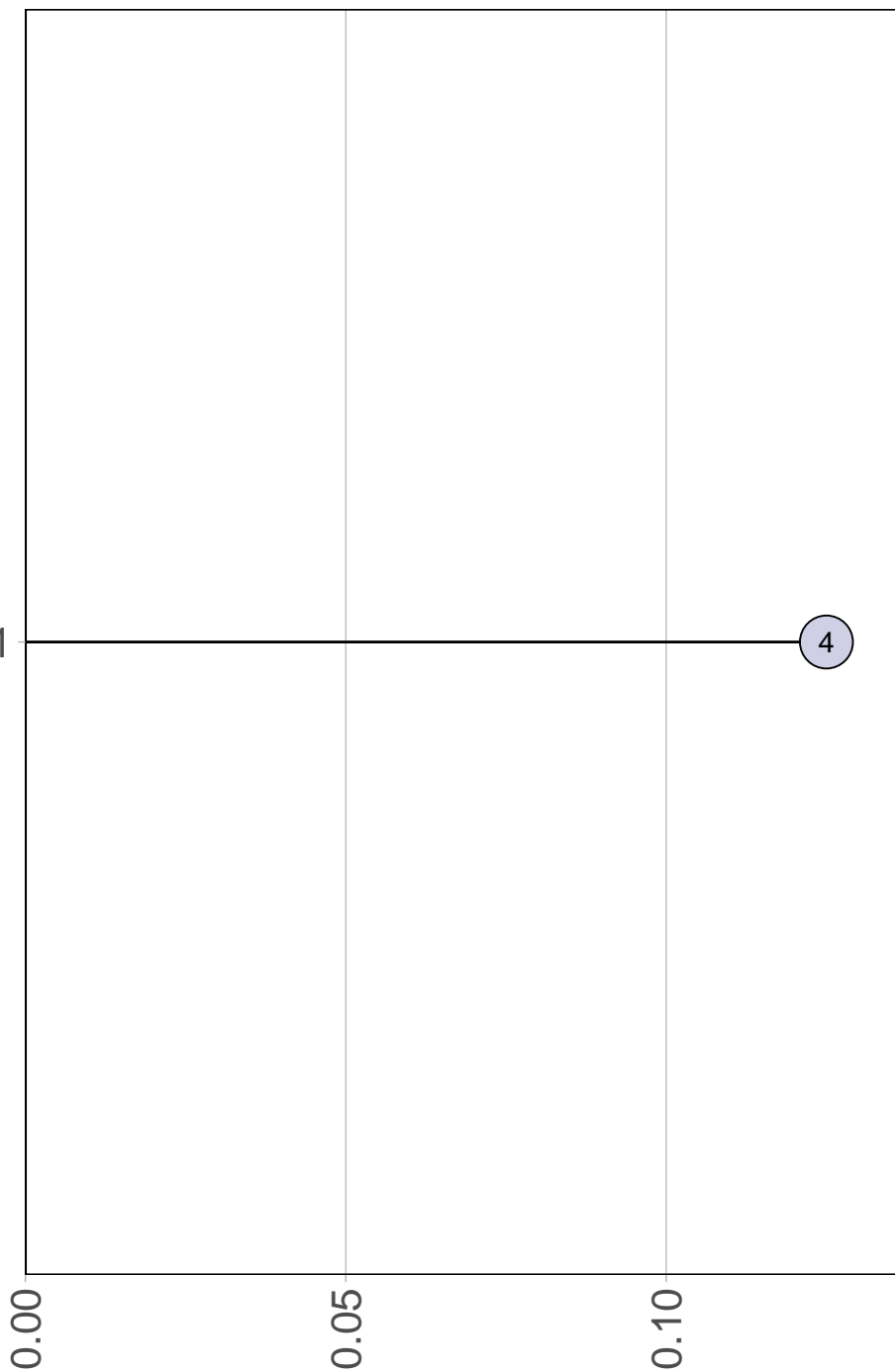
gene



muscle_tentacle_retractor_module_6

gene

NvSoxE1

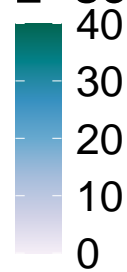


average in silico ChIP score

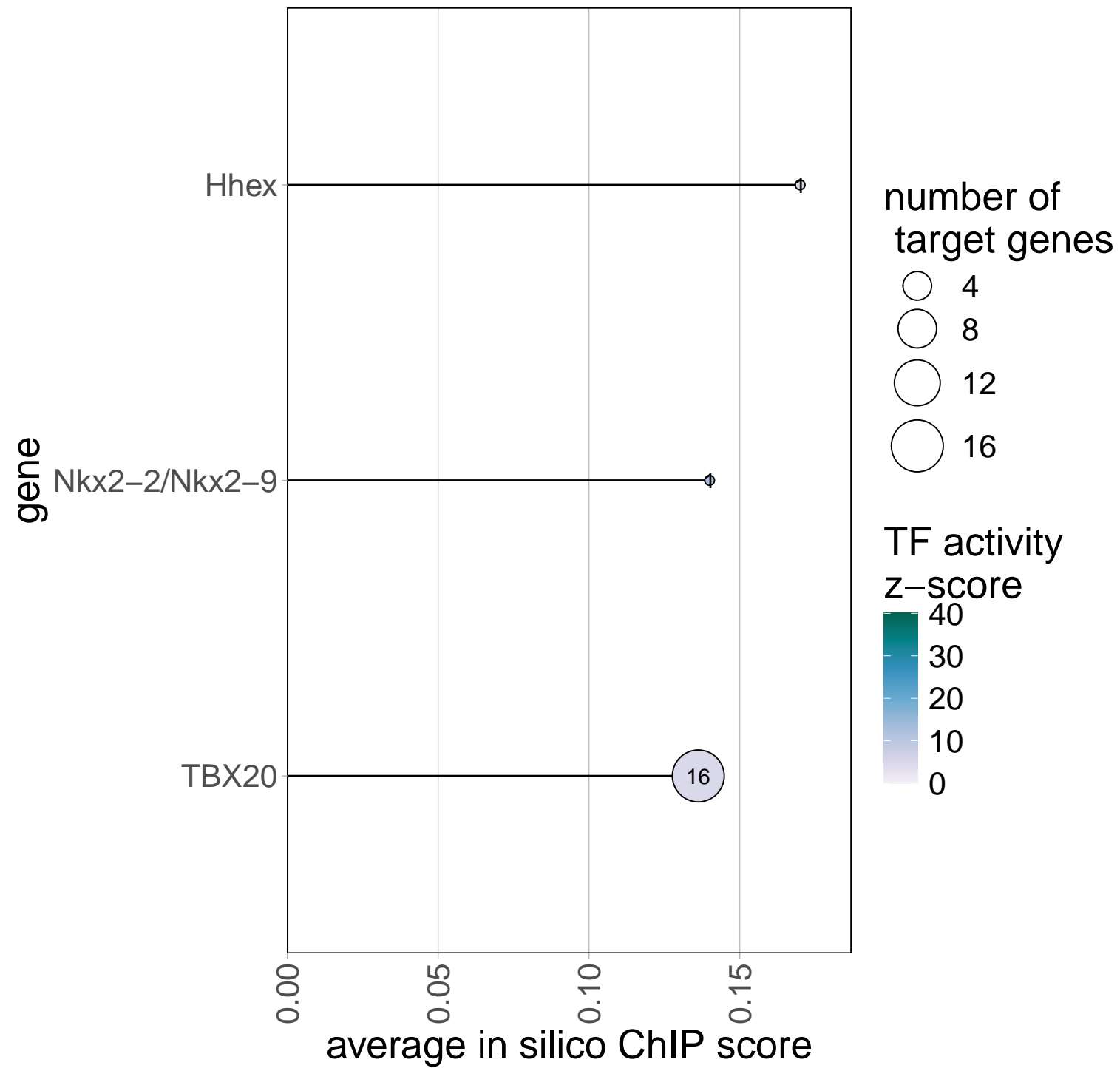
number of
target genes

○ 4

TF activity
z-score



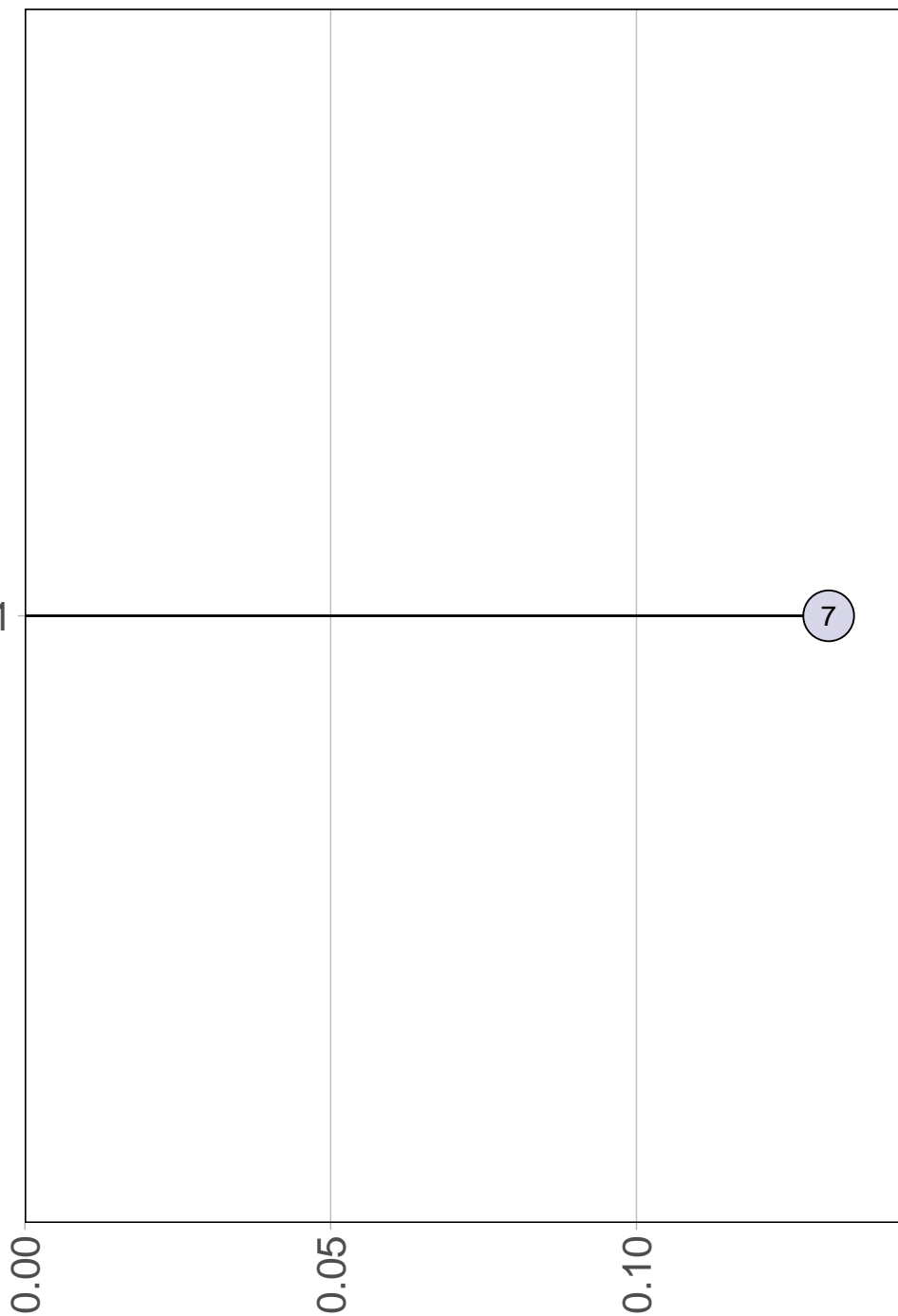
muscle_mesentery_retractor_module_2



muscle_mesentery_retractor_module_3

gene

Dmbx1



average in silico ChIP score

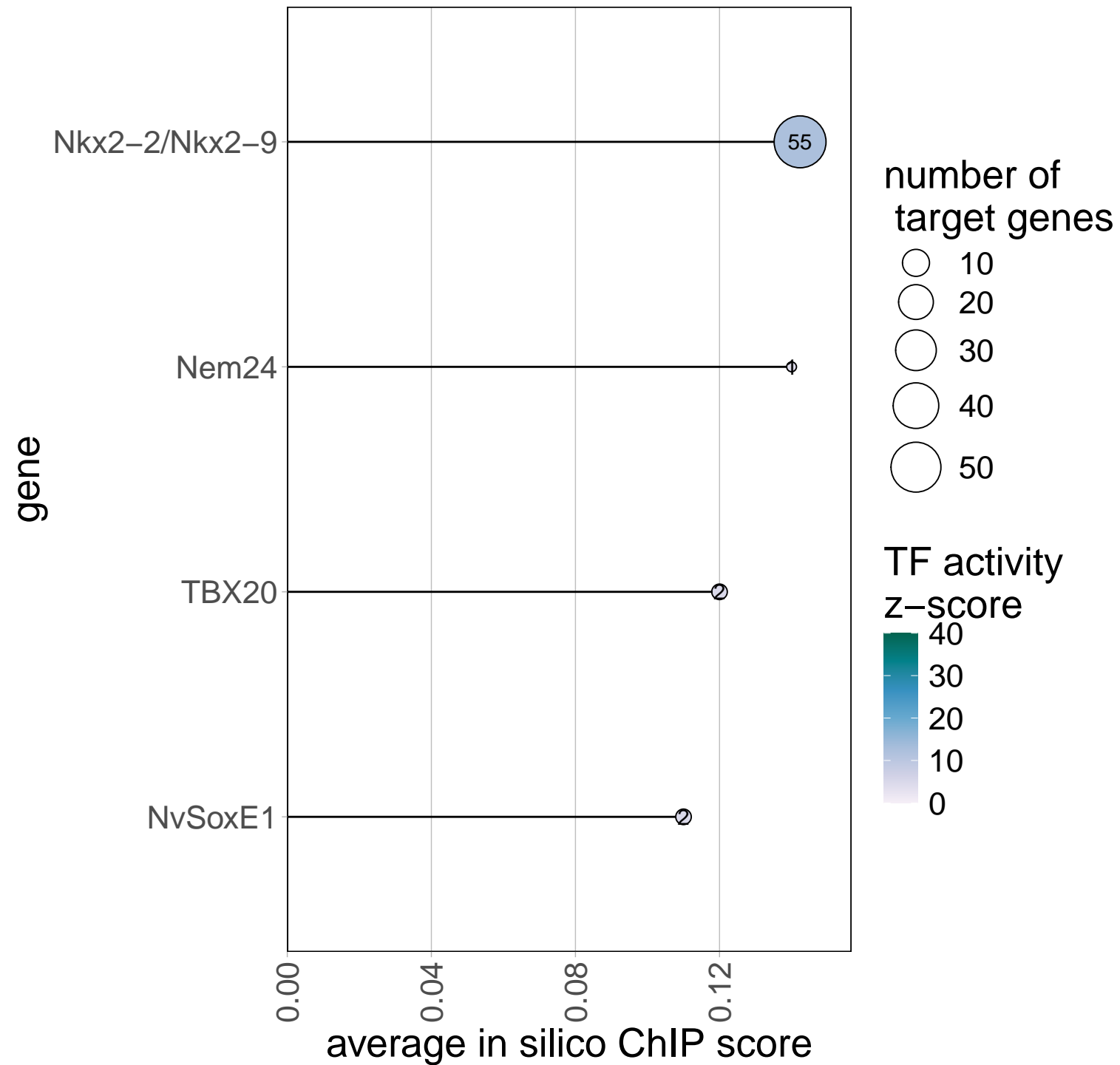
number of
target genes

○ 7

TF activity
z-score

40
30
20
10
0

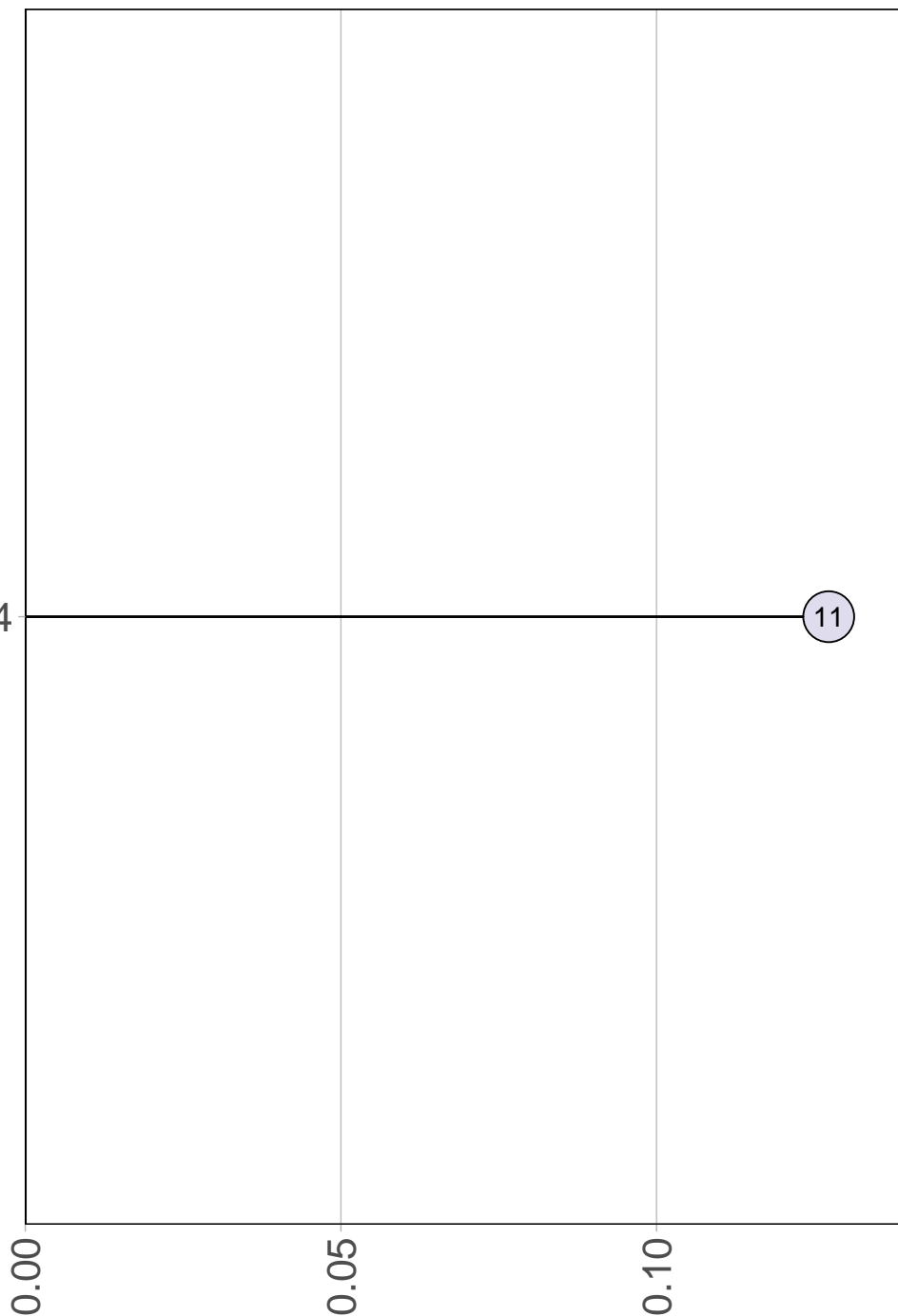
muscle_mesentery_retractor_module_4



muscle_mesentery_retractor_module_5

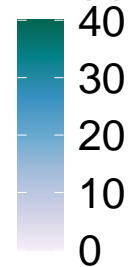
gene

Nem24



TF activity

z-score

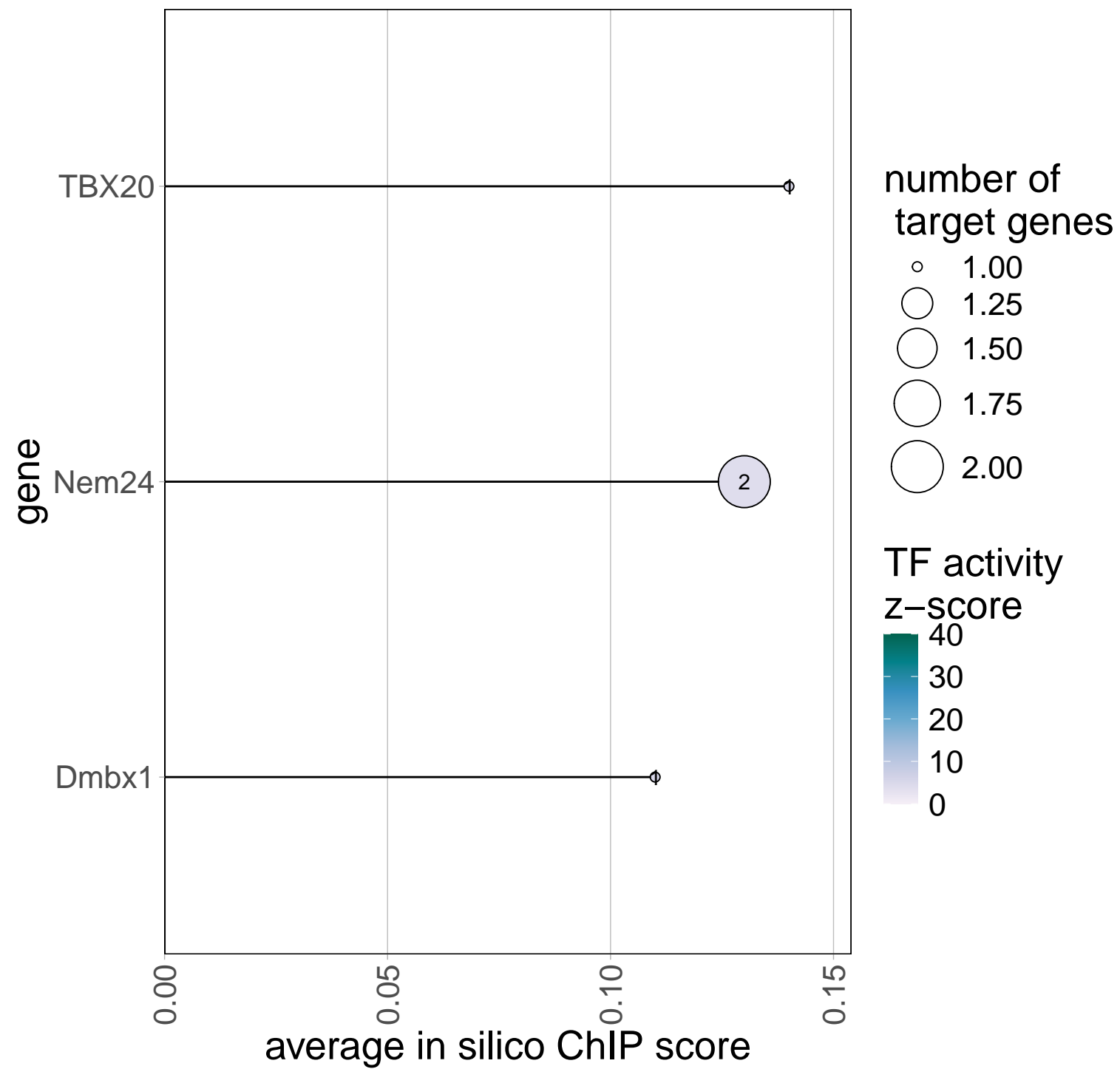


number of
target genes



average in silico ChIP score

muscle_mesentery_retractor_module_6



muscle_mesentery_retractor_module_7

gene

NvSoxE1

Hhex

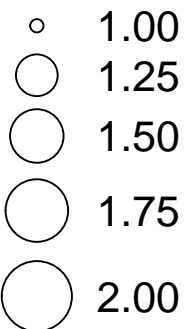
0.00

0.05

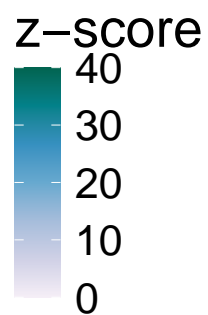
0.10

average in silico ChIP score

number of
target genes



TF activity



2

0

digestive_filaments_1_module_1

gene

HMGbox_Sox.HG1.37:li

Homeodomains.HG1.21:

FoxA

Pitx3/Pitx2/Pitx1

Elf3/Ehf/Elf5

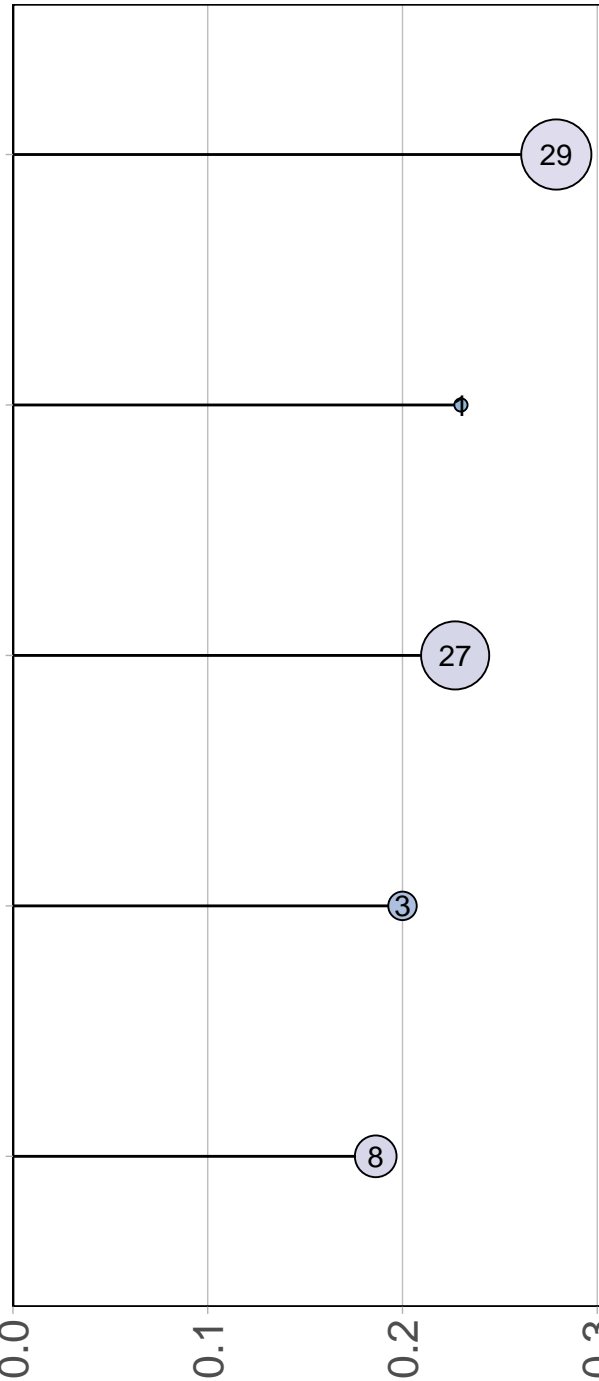
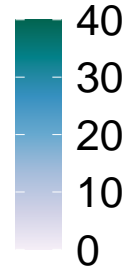
average in silico ChIP score

number of
target genes

○ 10

○ 20

TF activity
z-score



digestive_filaments_1_module_2

gene

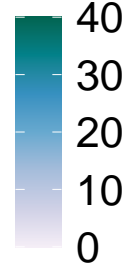
Homeodomains.HG1.21:

Pitx3/Pitx2/Pitx1

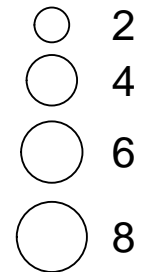
FoxA

TF activity

z-score



number of target genes



0.0 0.1 0.2
average in silico ChIP score

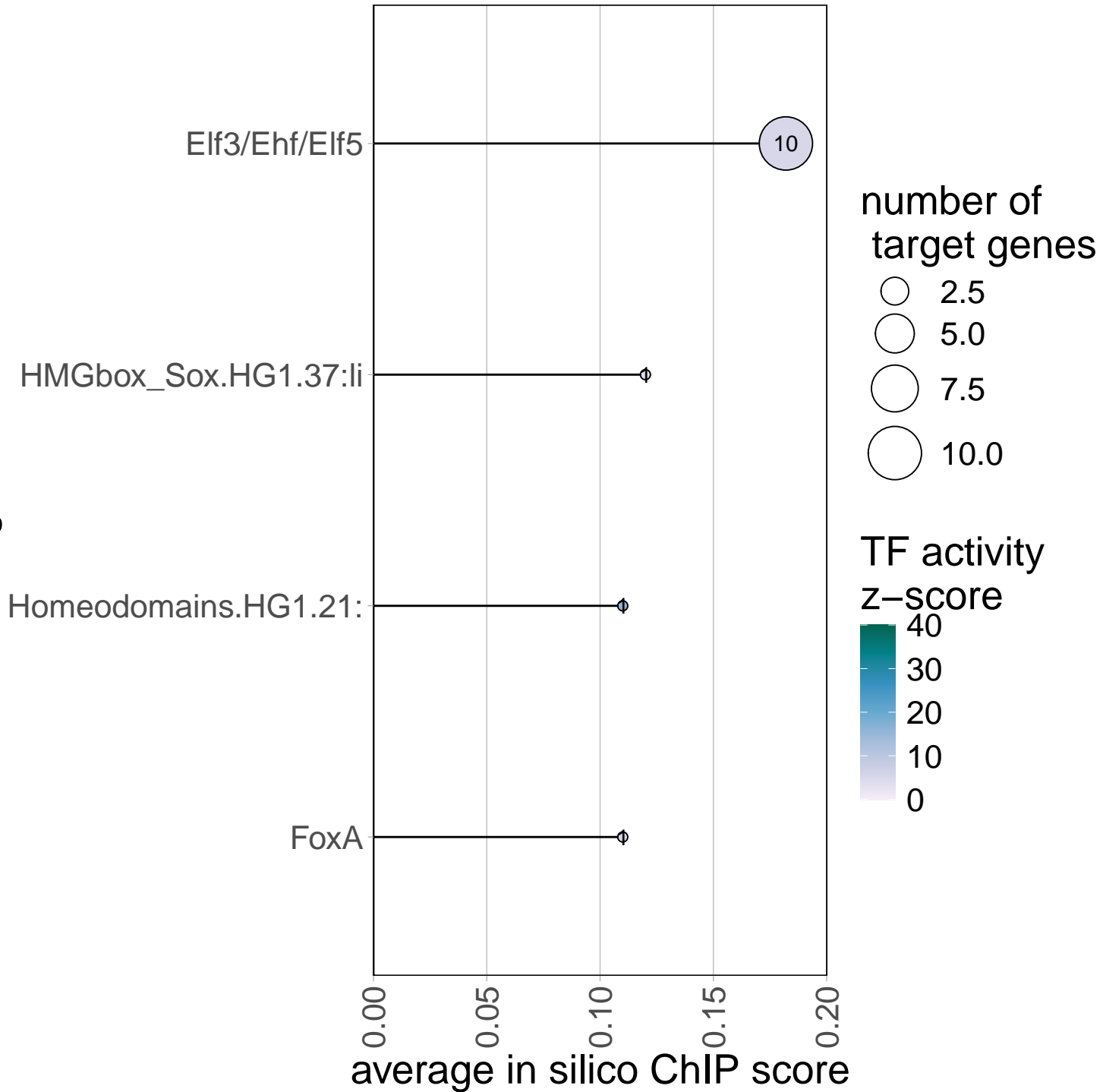
8

3

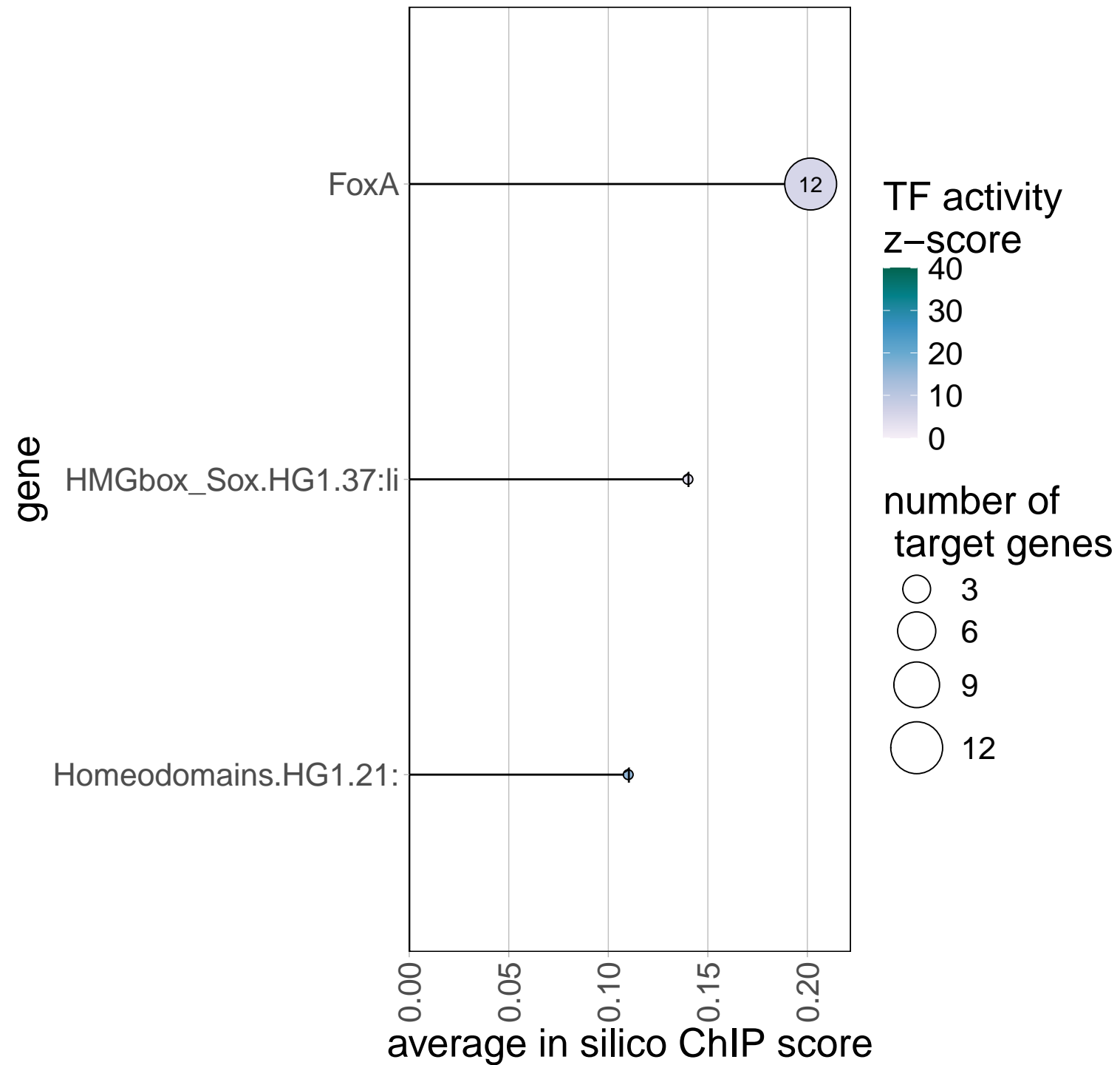
0

digestive_filaments_1_module_3

gene

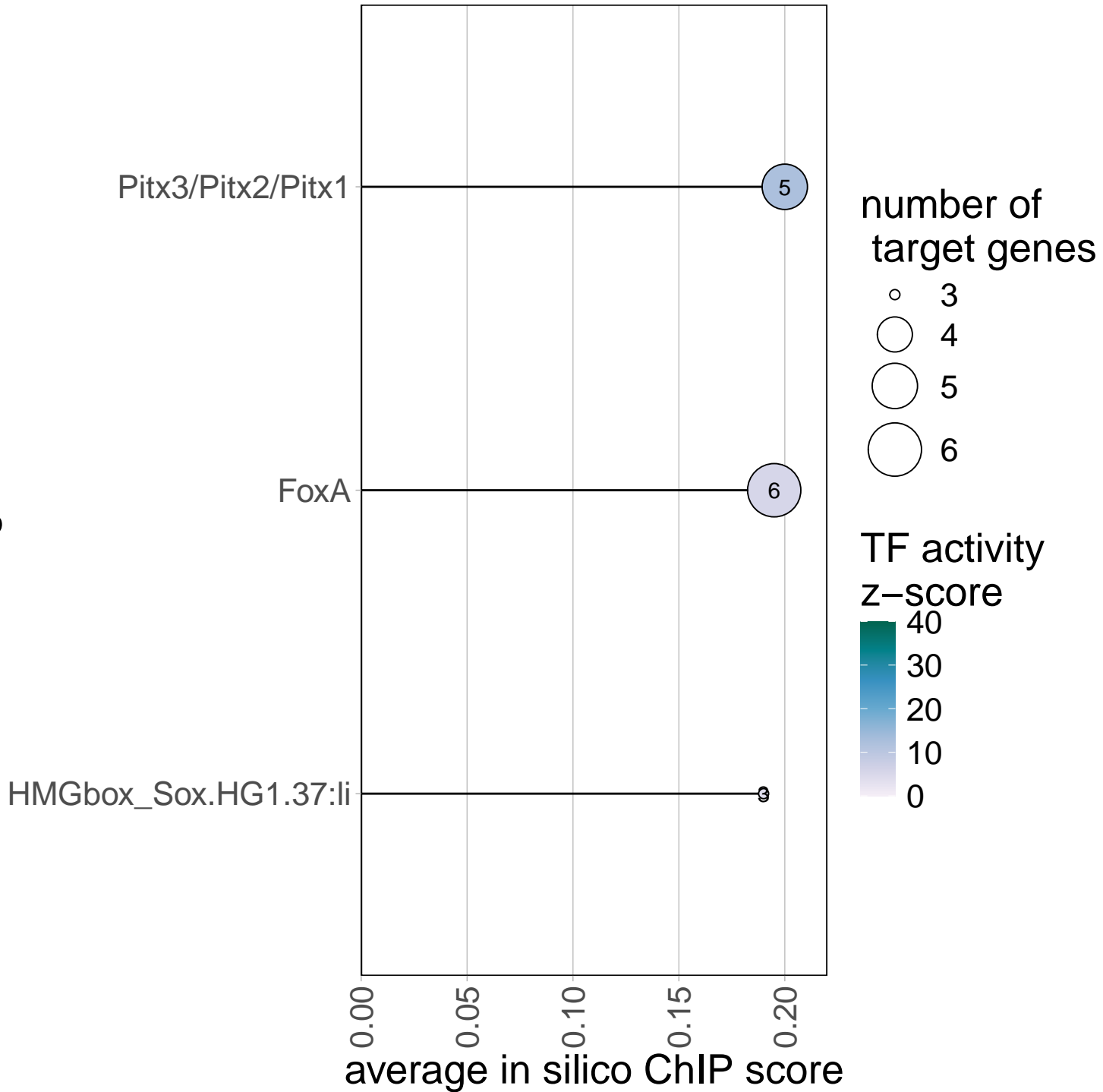


digestive_filaments_1_module_4



digestive_filaments_1_module_5

gene



digestive_filaments_1_module_6

gene

Homeodomains.HG1.21:

HMGbox_Sox.HG1.37:li

Pitx3/Pitx2/Pitx1

FoxA

Elf3/Ehf/Elf5

number of
target genes

○ 10

○ 20

○ 30

TF activity
z-score

40

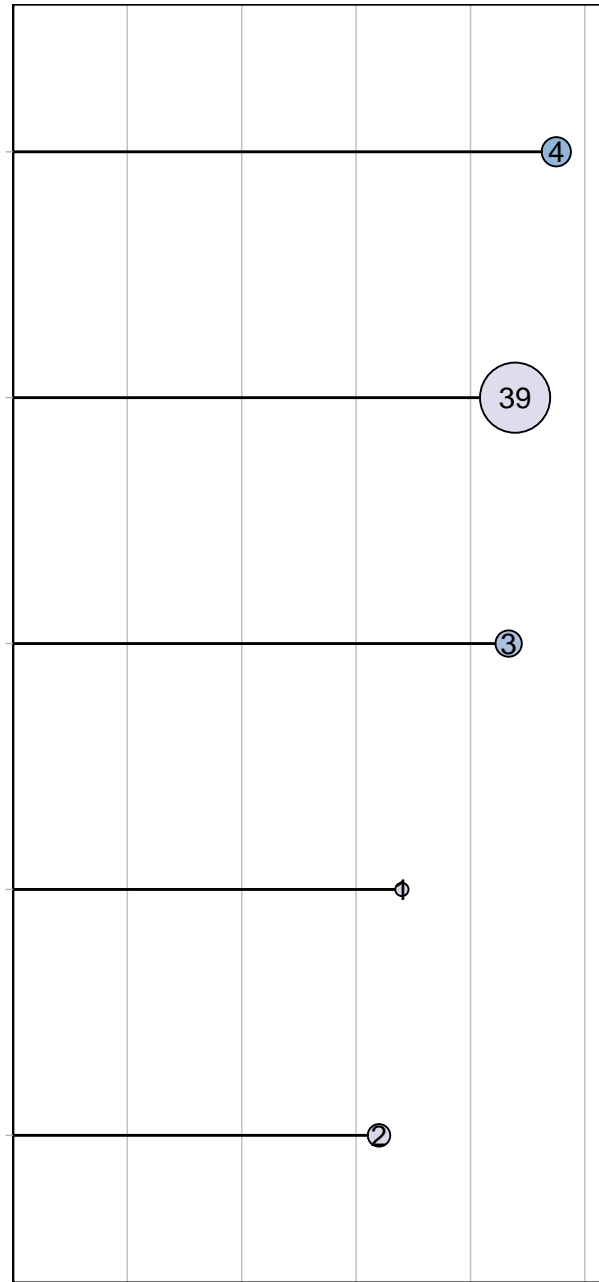
30

20

10

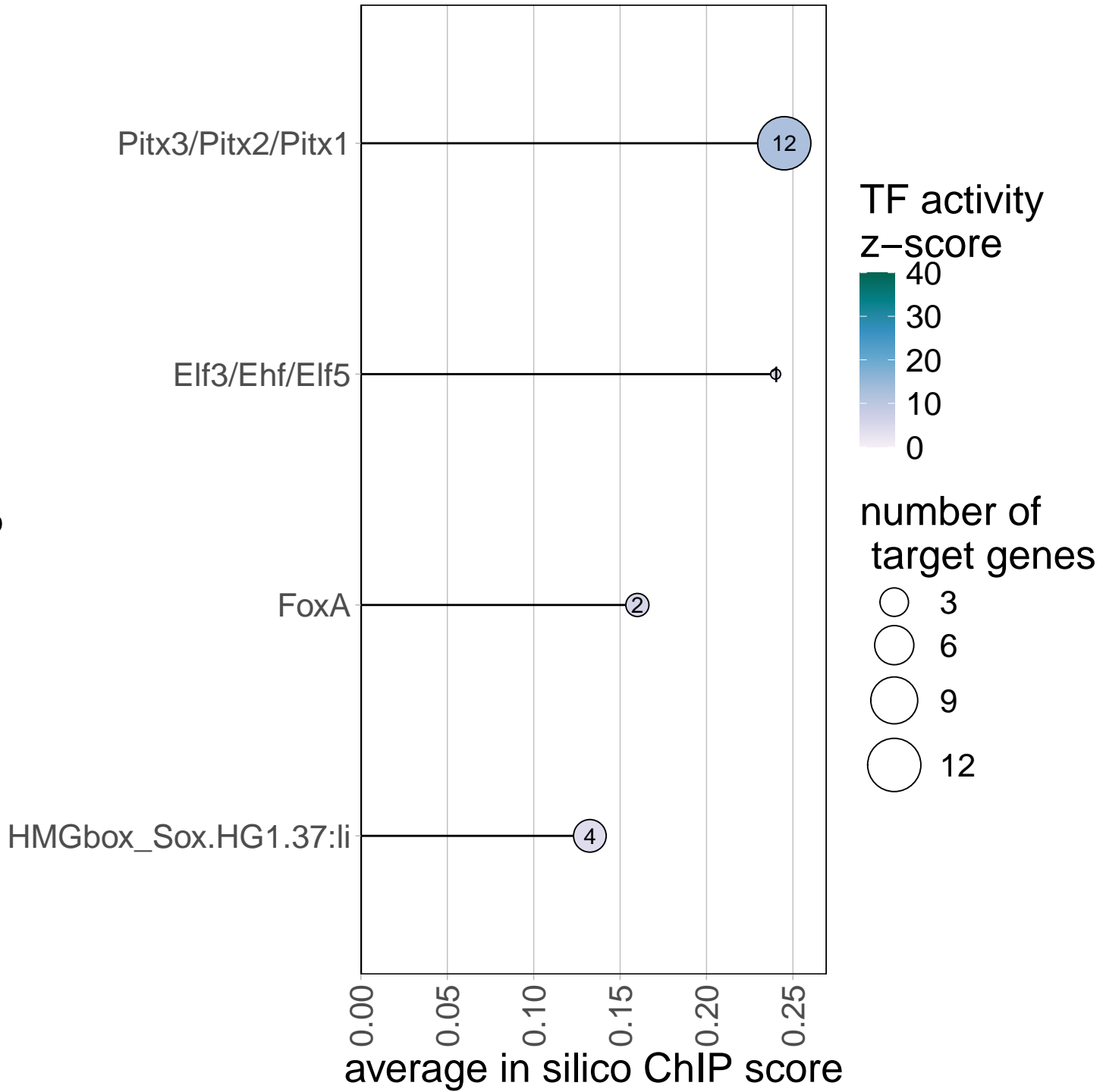
0

average in silico ChIP score



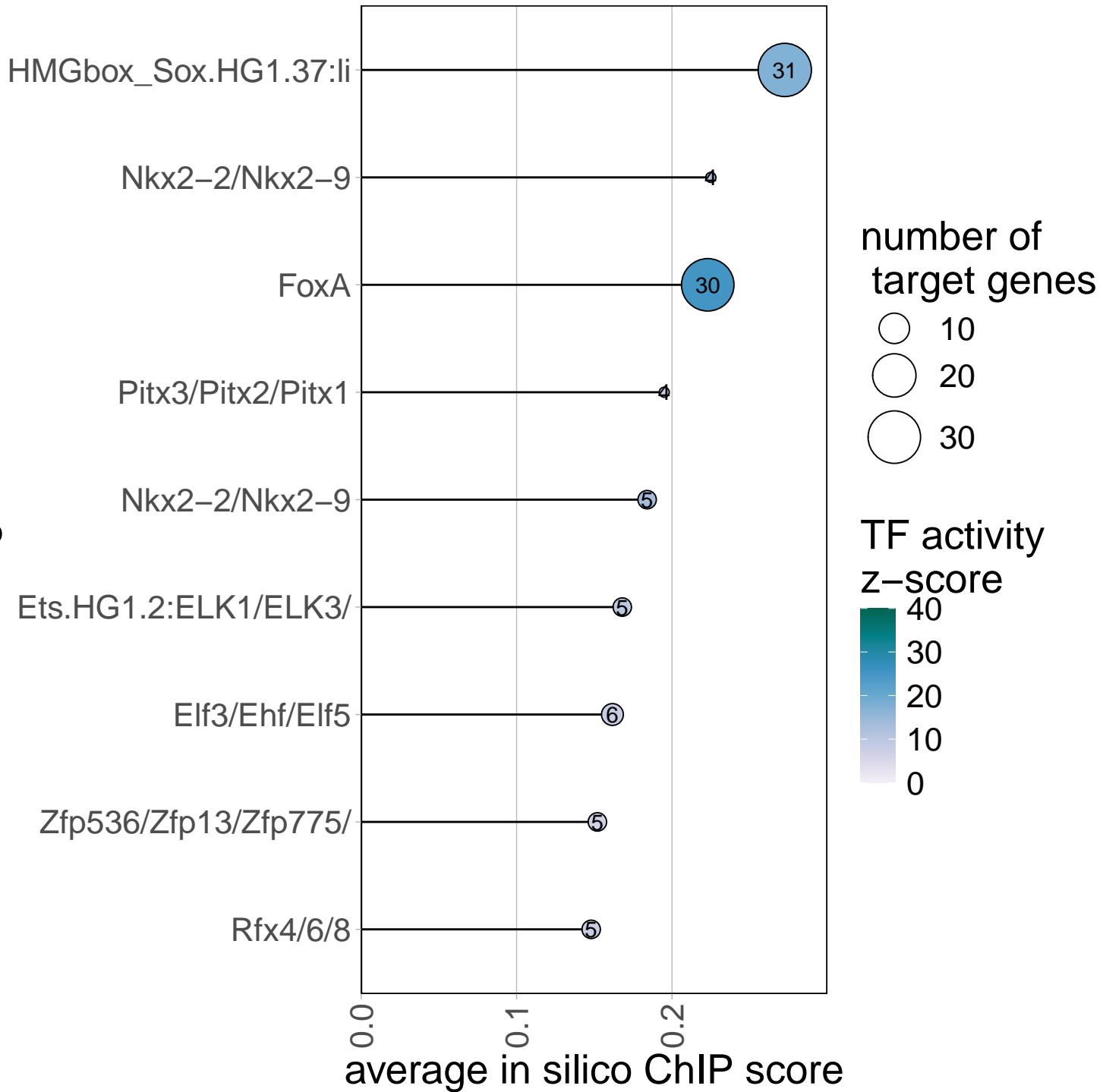
digestive_filaments_1_module_7

gene



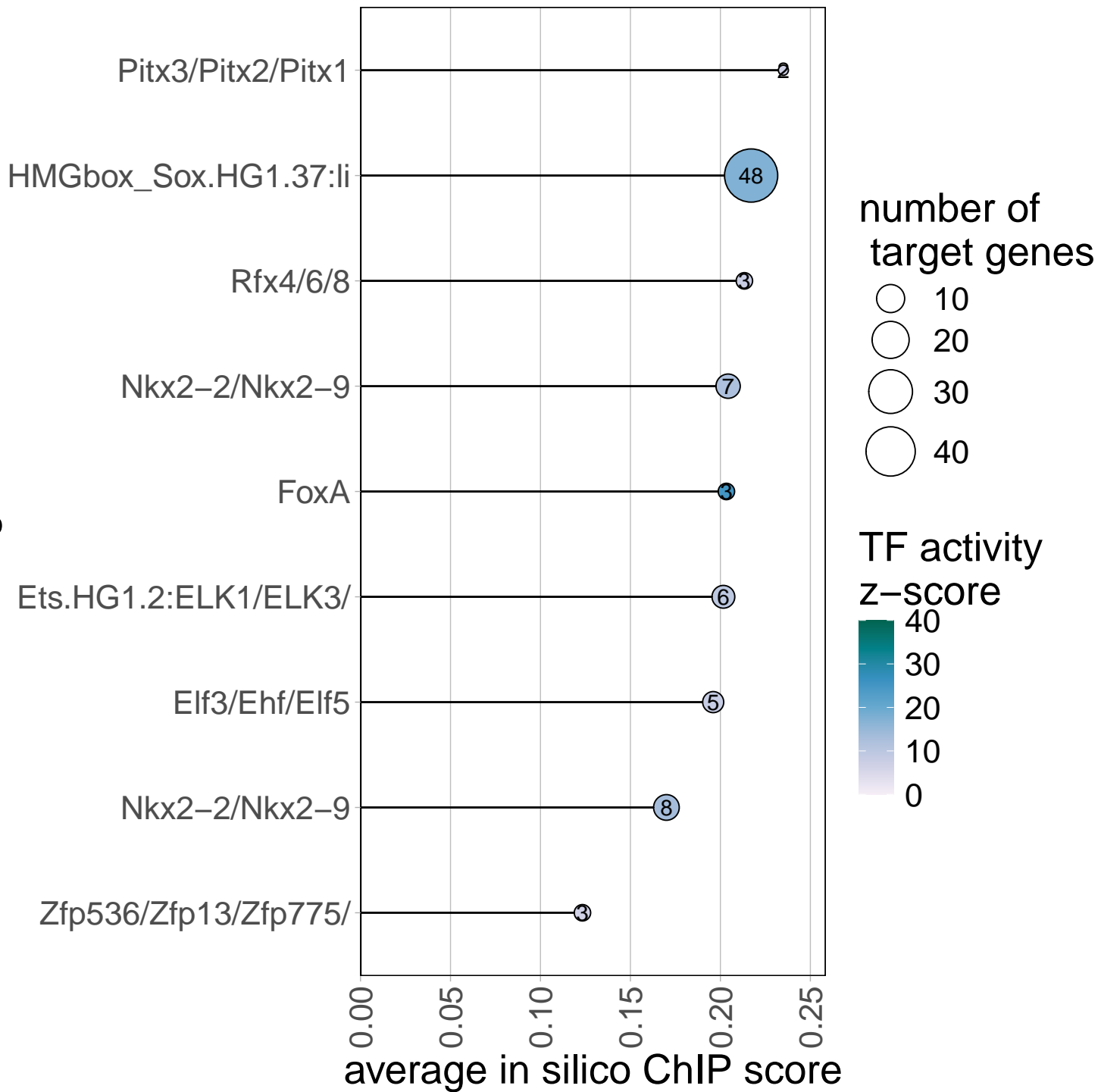
digestive_filaments_2_module_1

gene



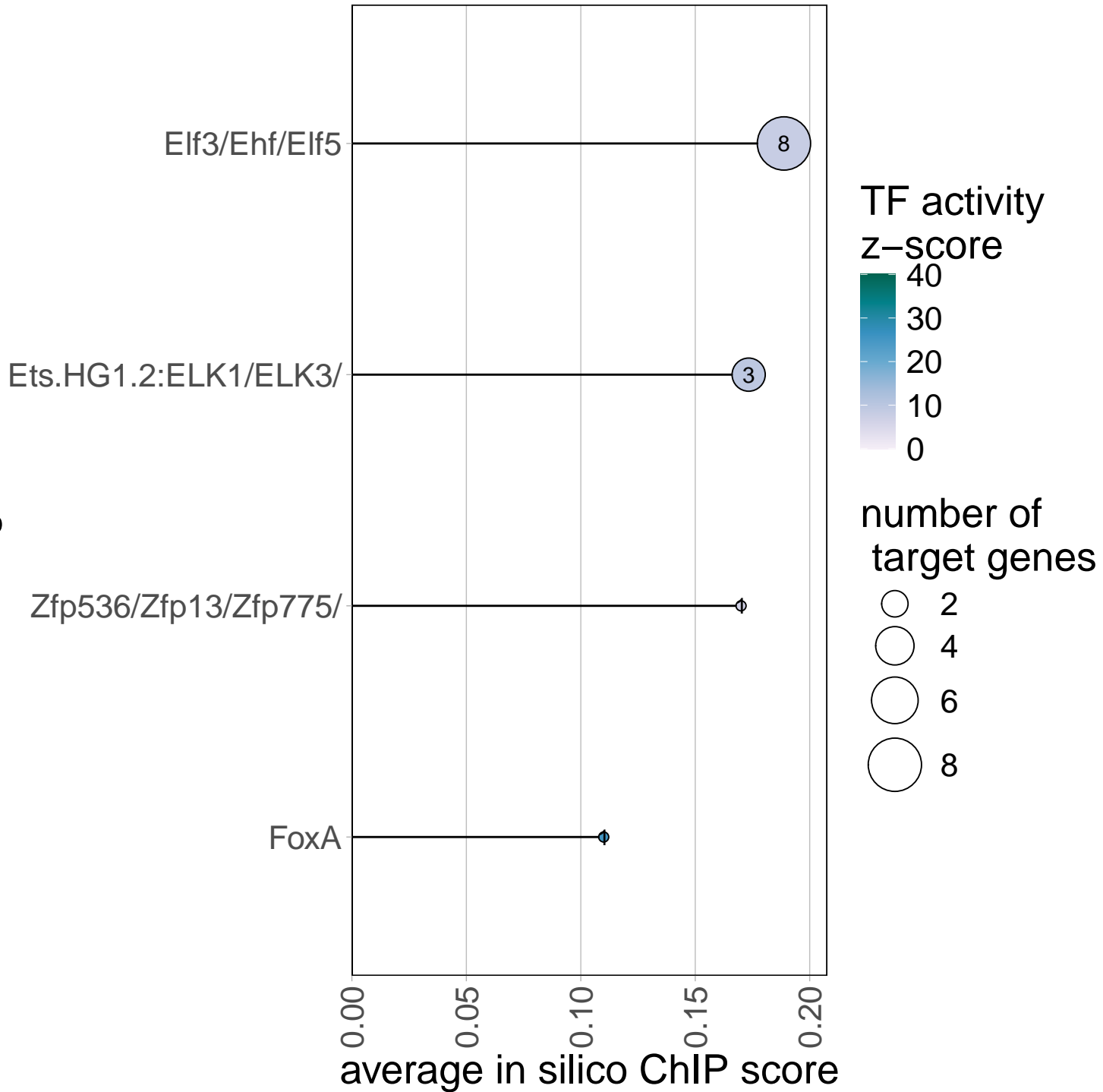
digestive_filaments_2_module_2

gene



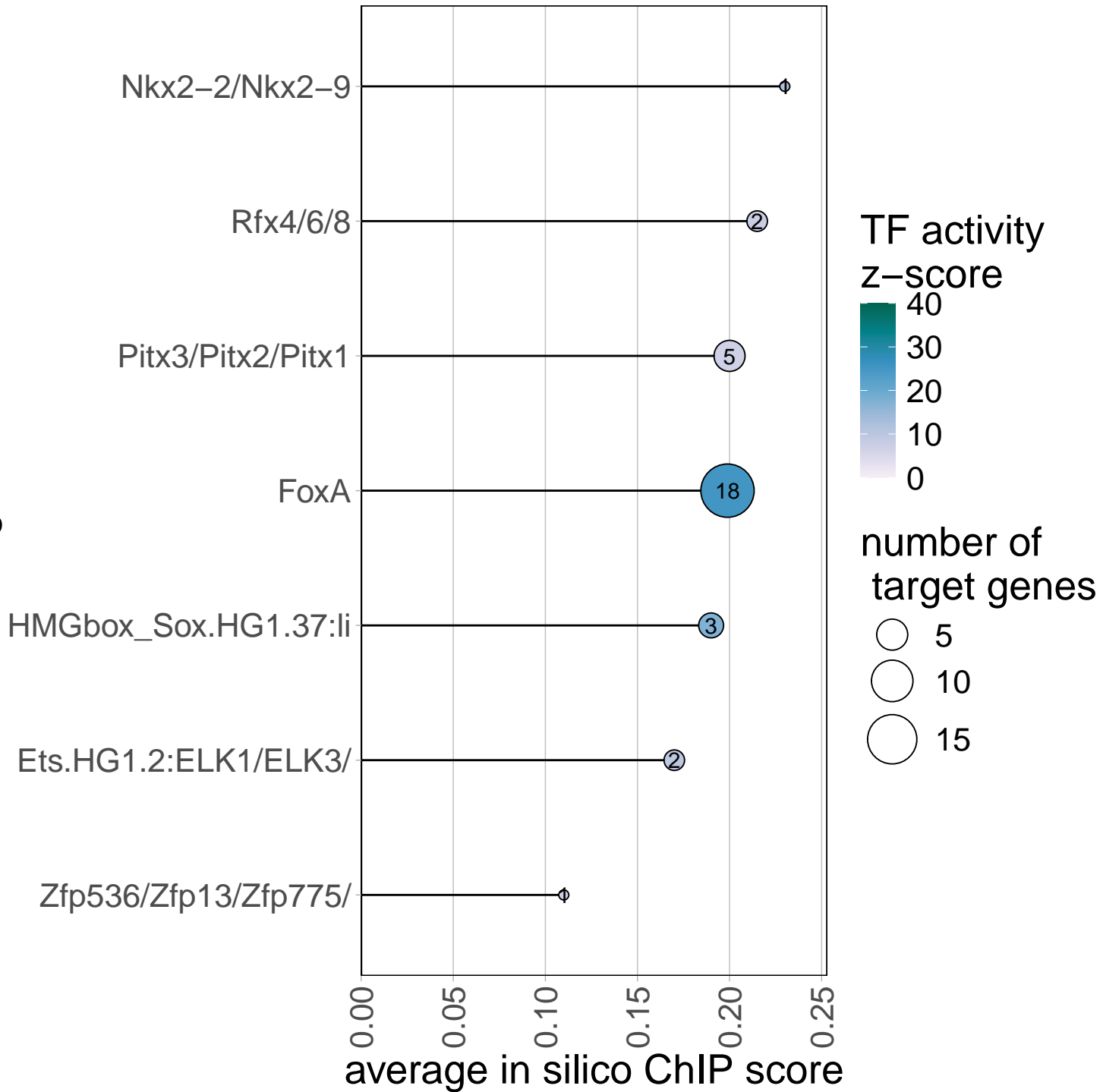
digestive_filaments_2_module_3

gene

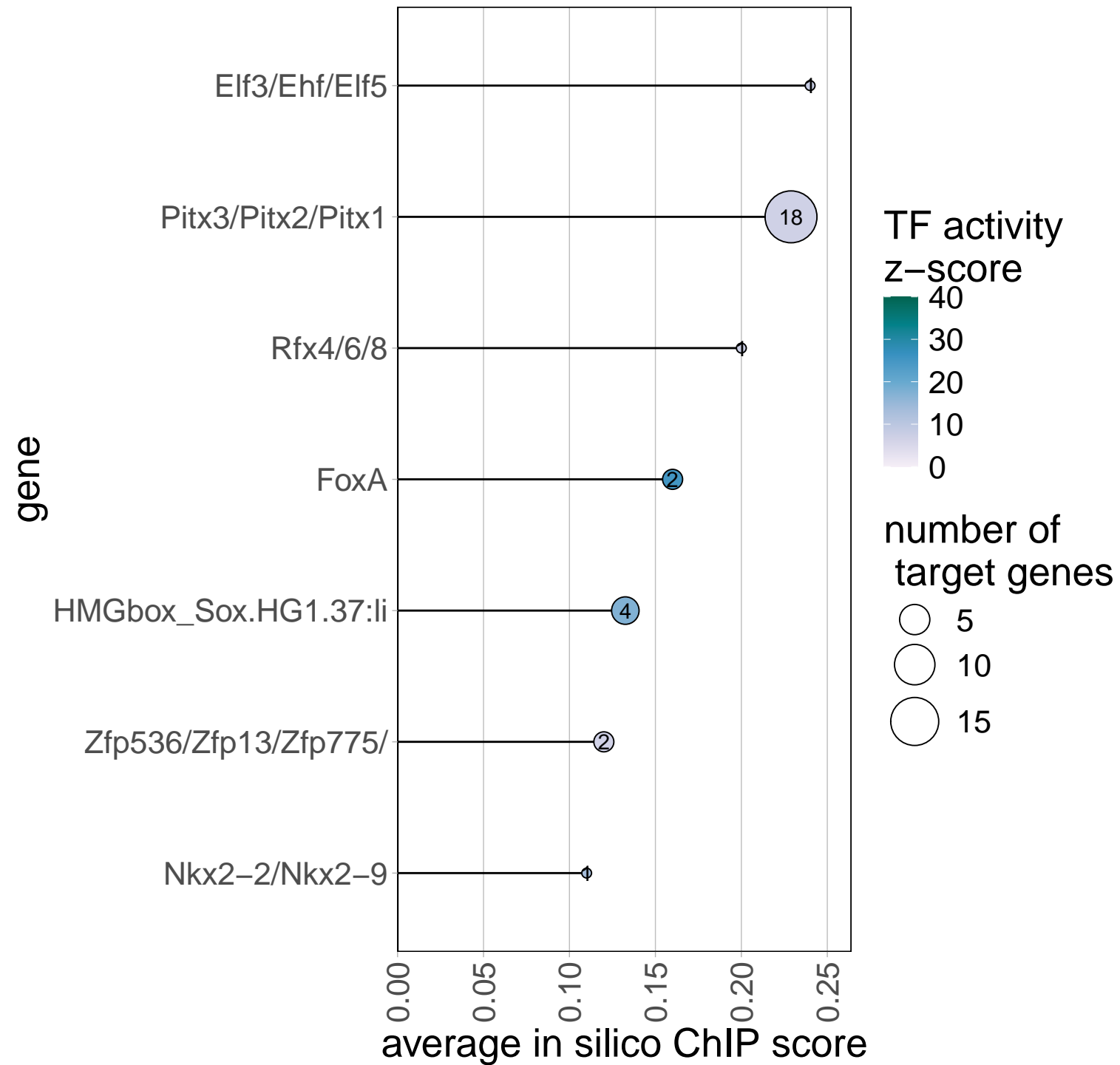


digestive_filaments_2_module_4

gene



digestive_filaments_2_module_5



digestive_filaments_2_module_6

gene

Nkx2-2/Nkx2-9

Elf3/Ehf/Elf5

0.00

0.05

0.10

0.15

average in silico ChIP score

TF activity

z-score

40

30

20

10

0

number of
target genes

○

1

○

2

○

3

○

4

○

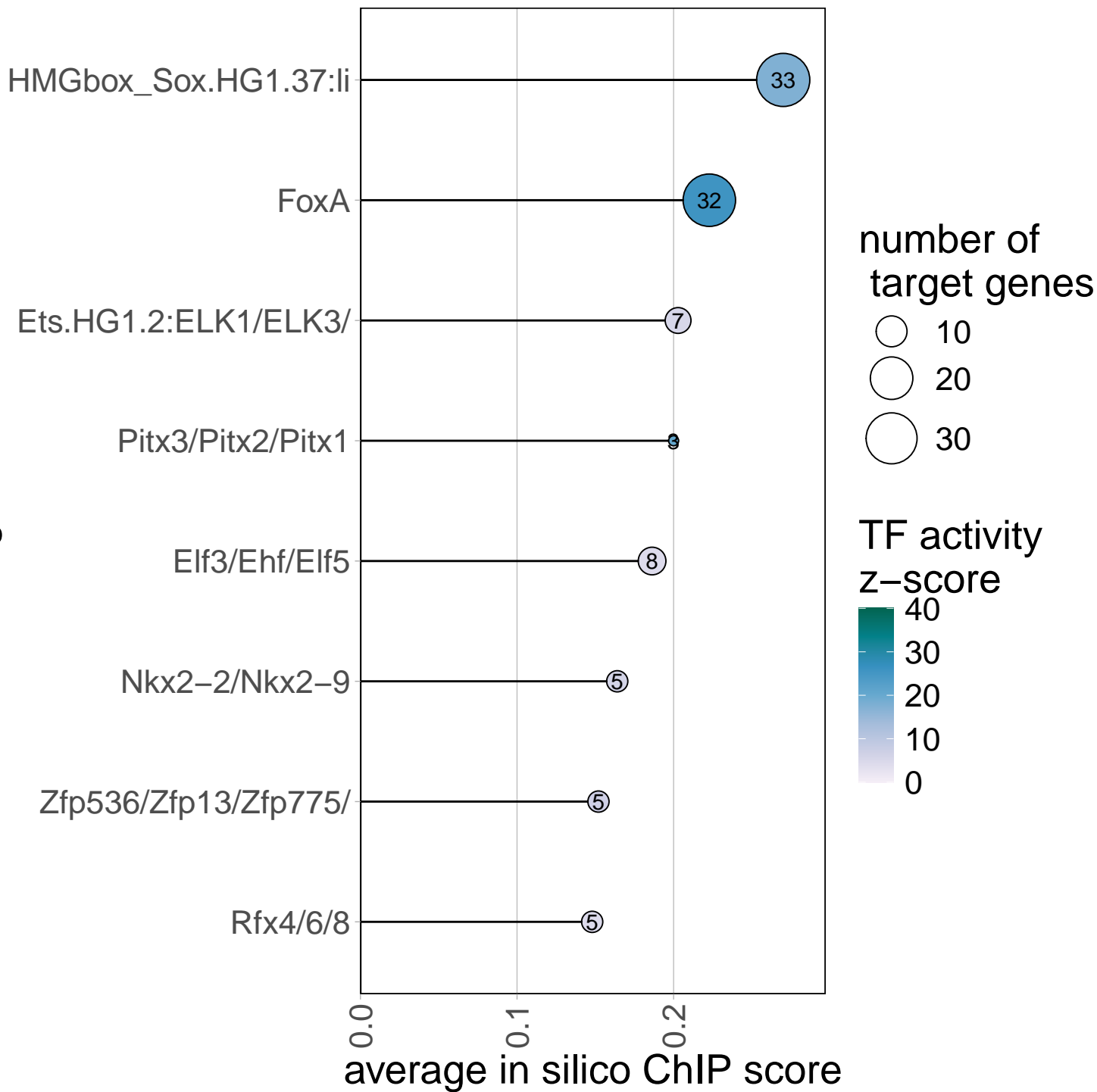
5

5

○

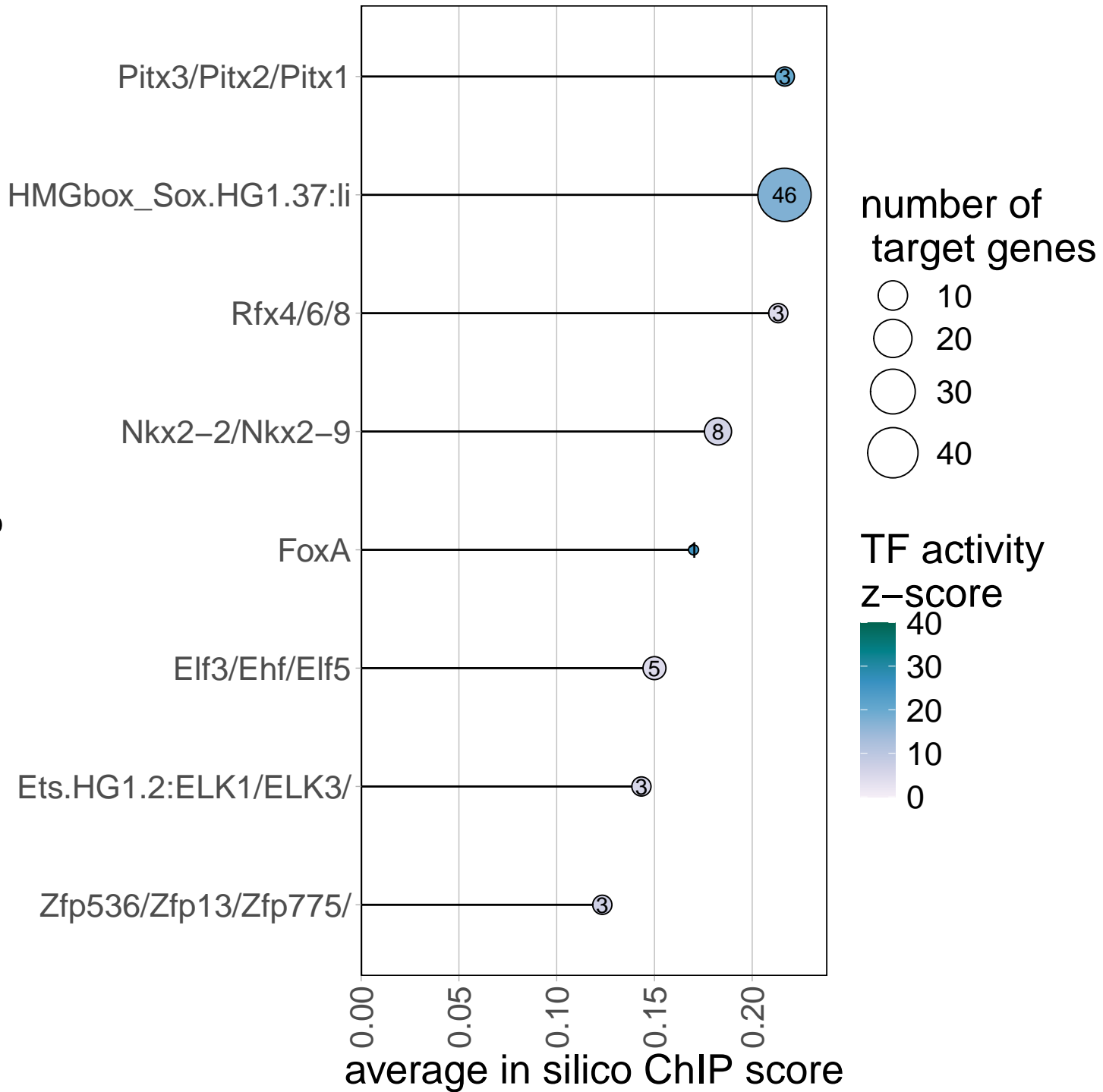
digestive_filaments_3_module_1

gene

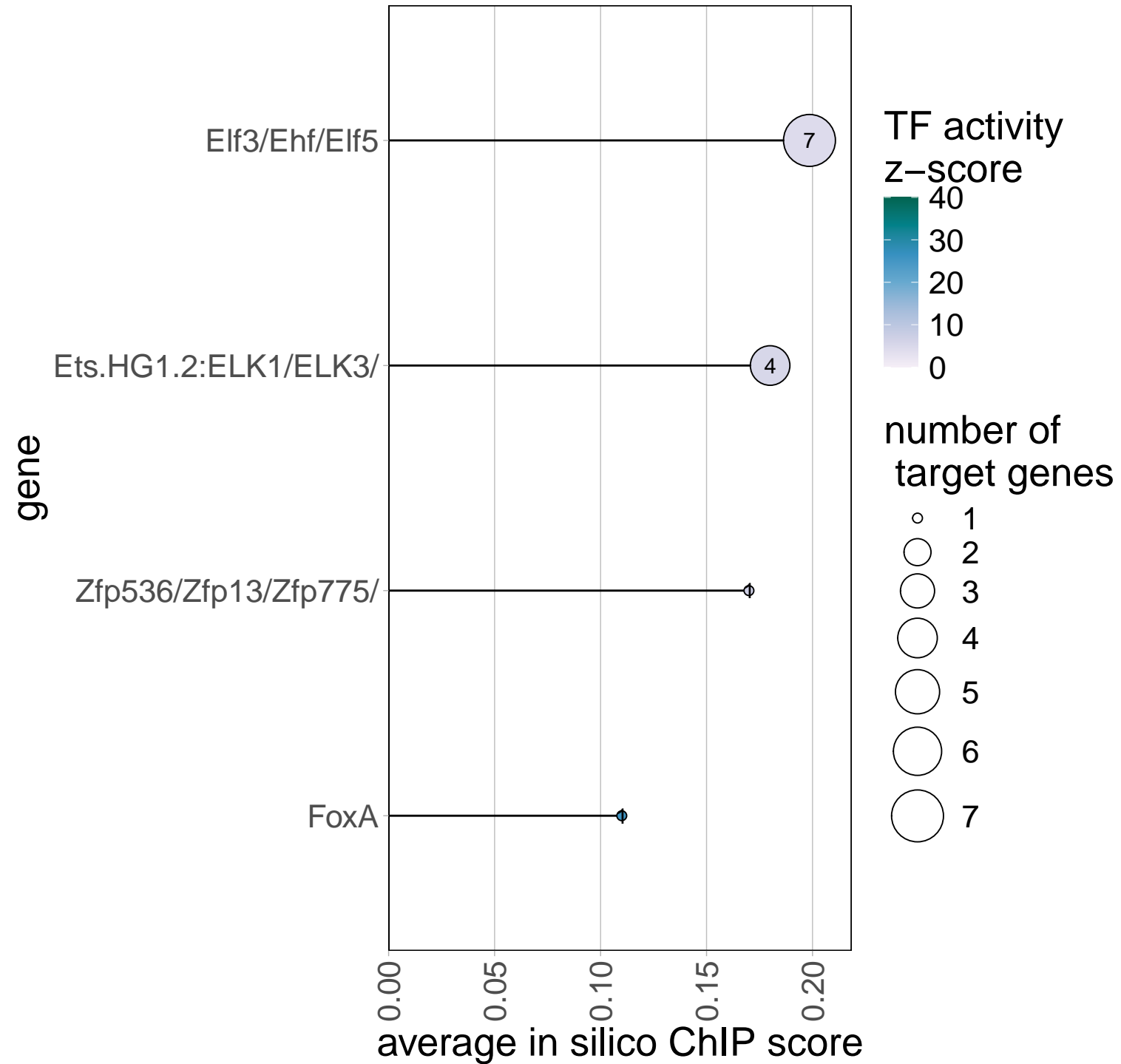


digestive_filaments_3_module_2

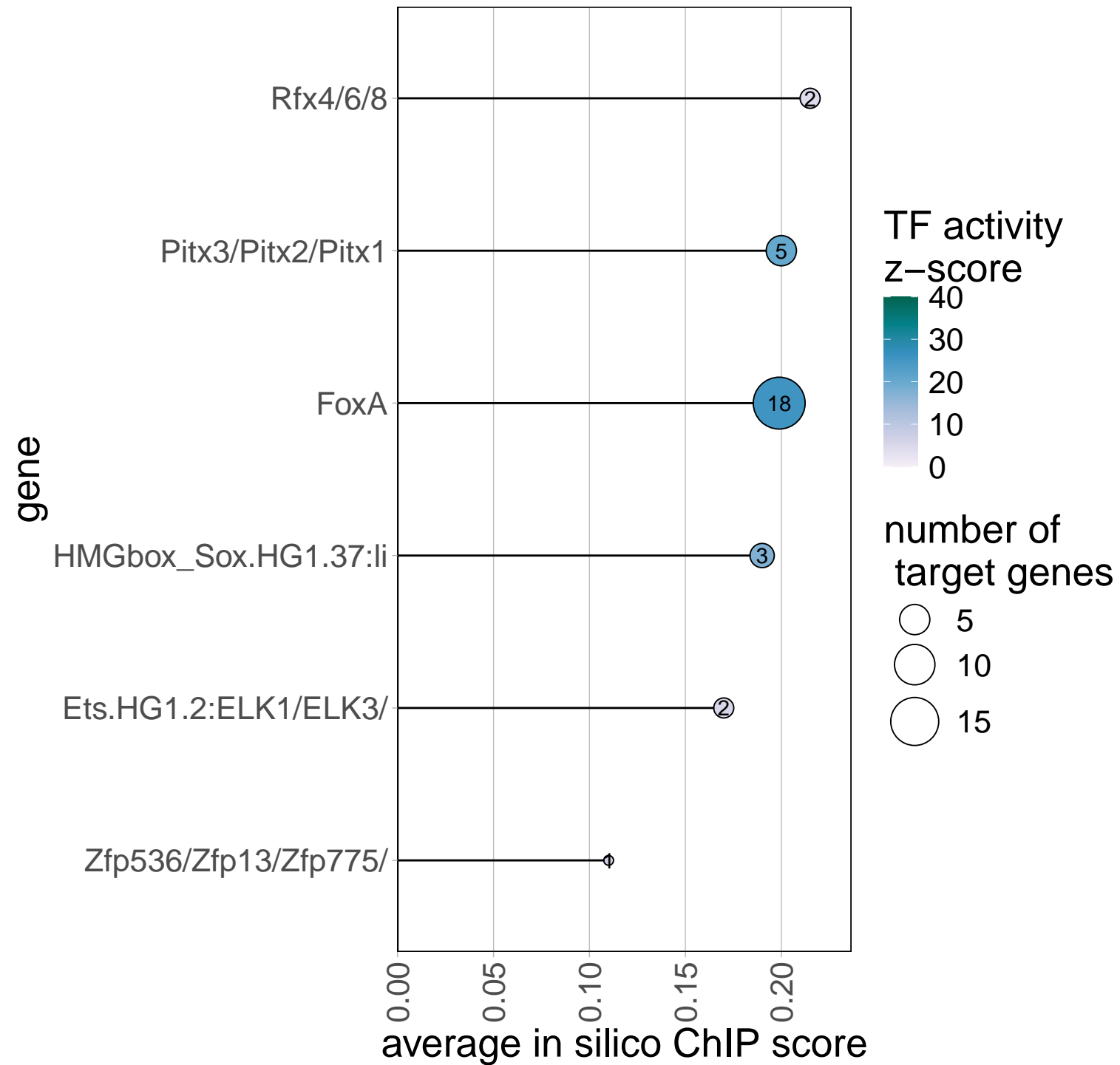
gene



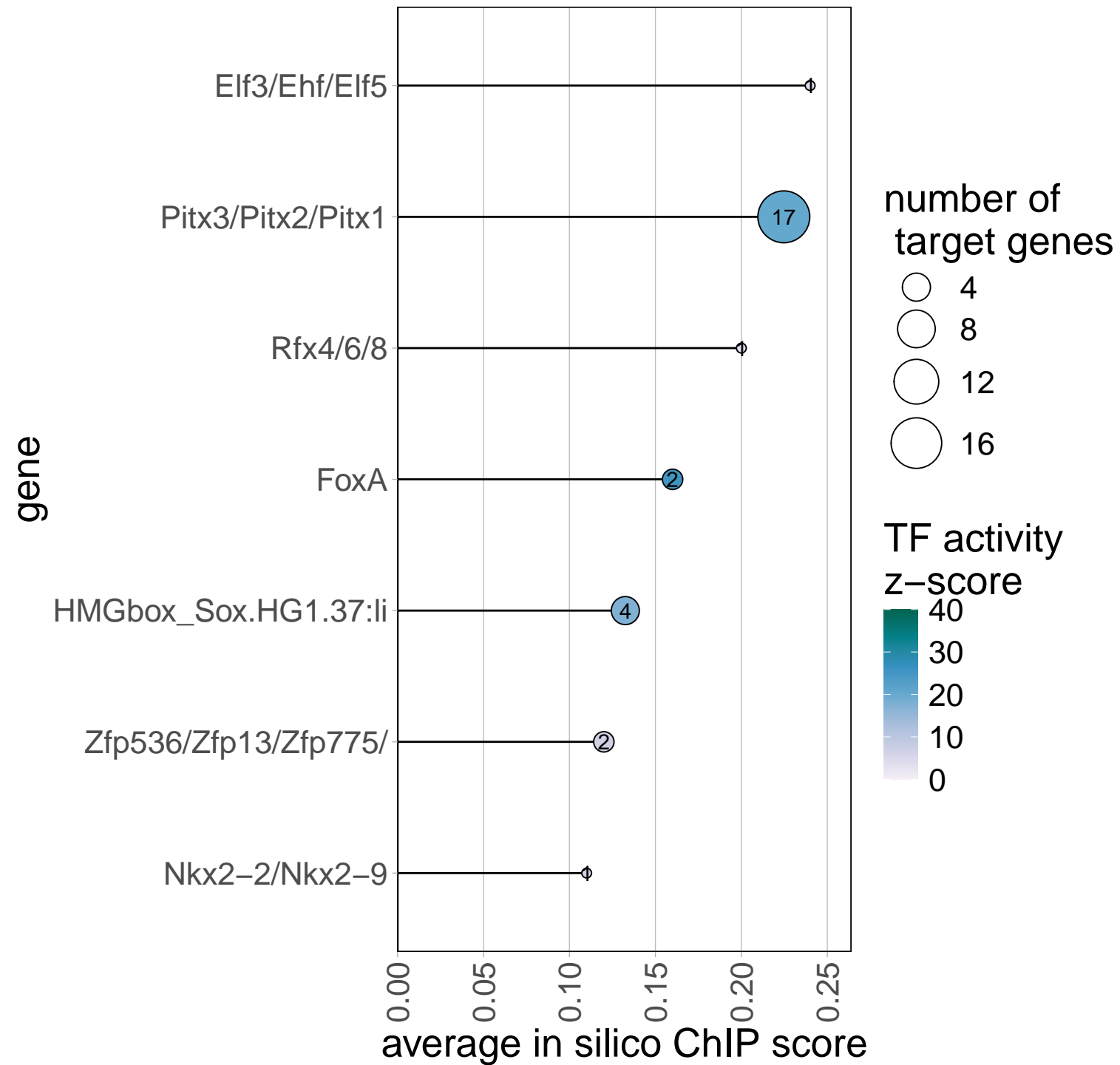
digestive_filaments_3_module_3



digestive_filaments_3_module_4



digestive_filaments_3_module_5



epidermis_1_module_1

gene

Doublesex_DM.HG1.12:

10

Pax5/Pax8/Pax2

Forkhead.HG1.31:like

Cers6/Cers5

FoxQ2d

average in silico ChIP score

number of
target genes

2.5

5.0

7.5

10.0

TF activity

z-score

40

30

20

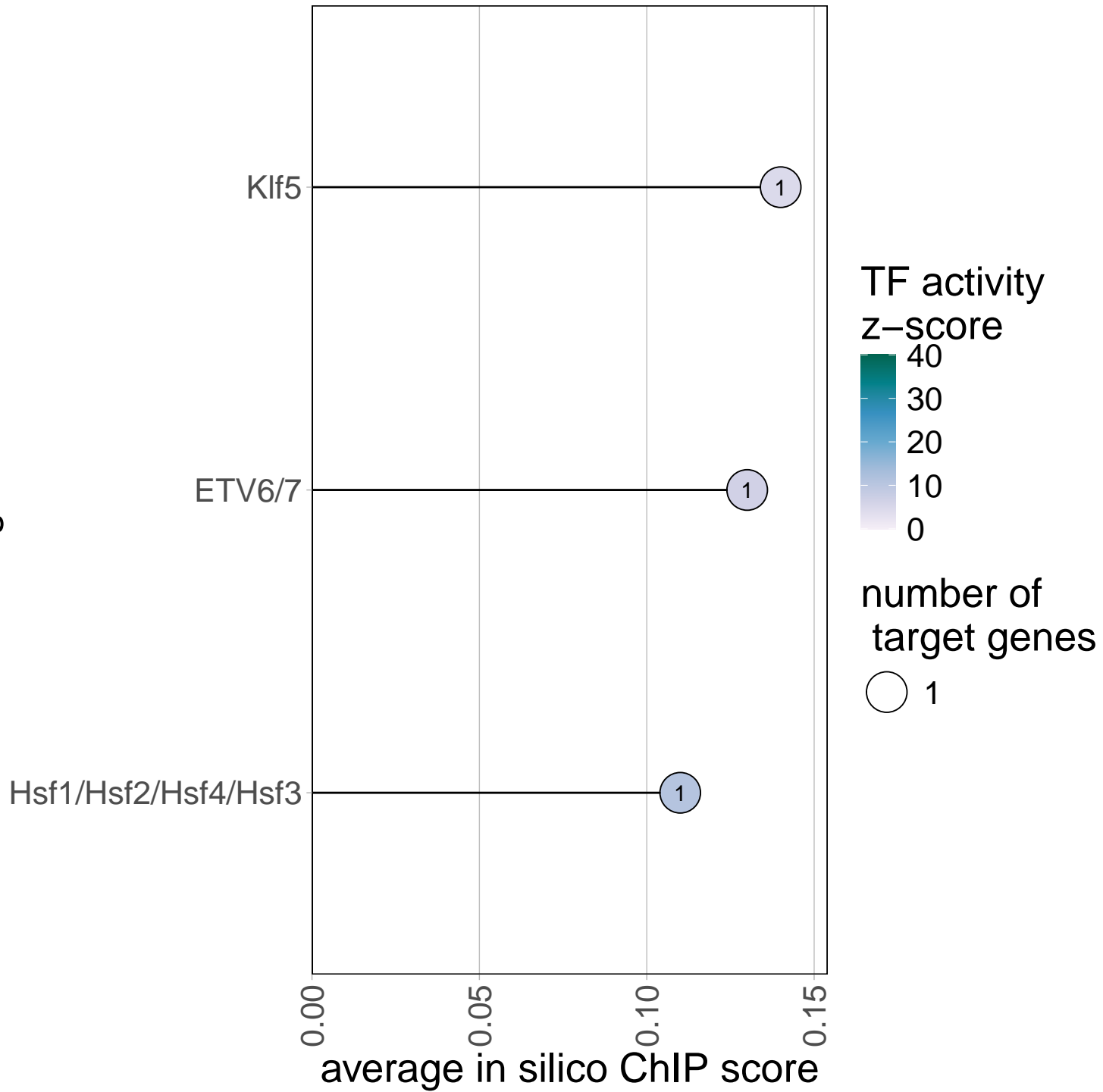
10

0

0

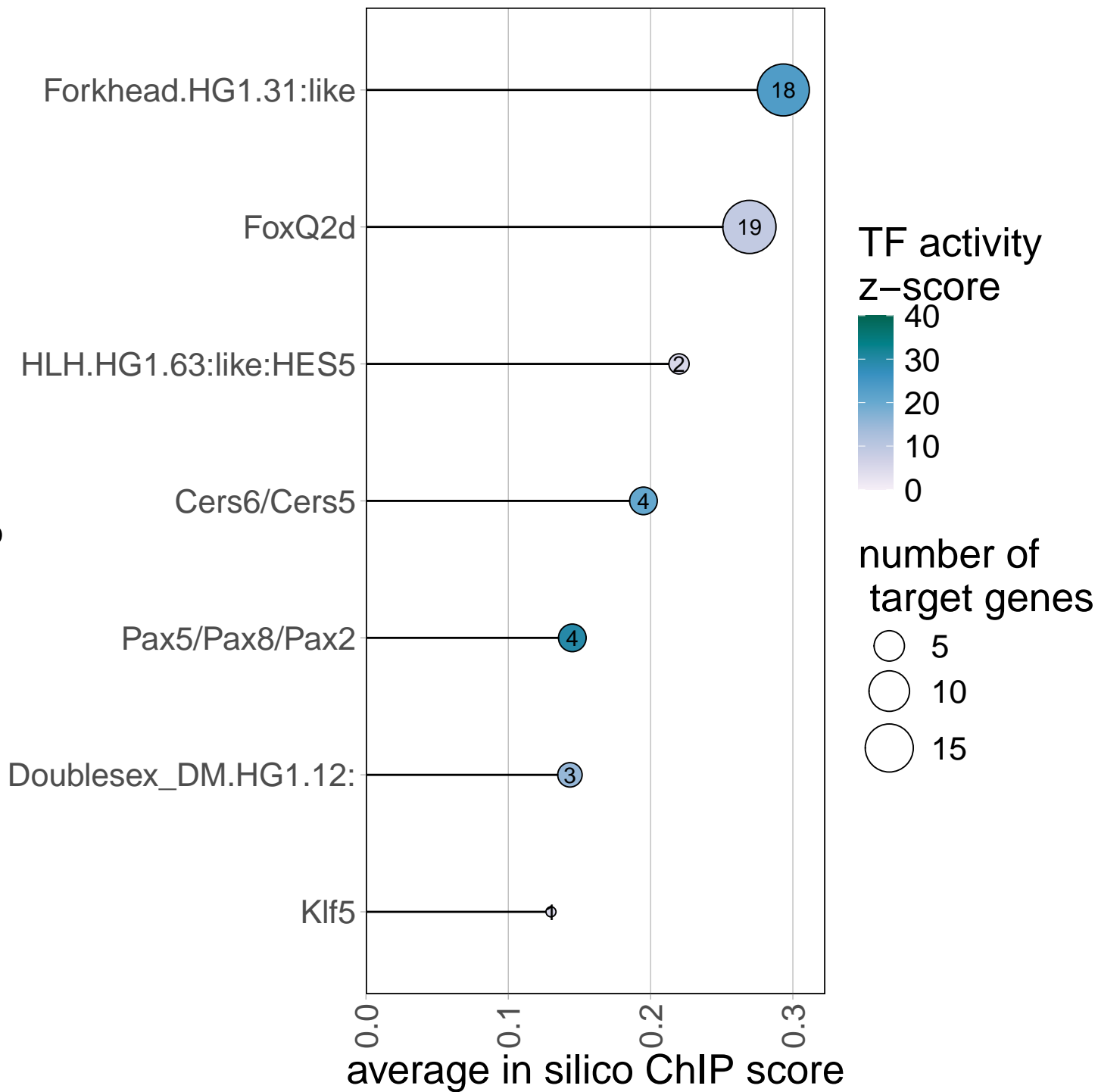
epidermis_1_module_2

gene



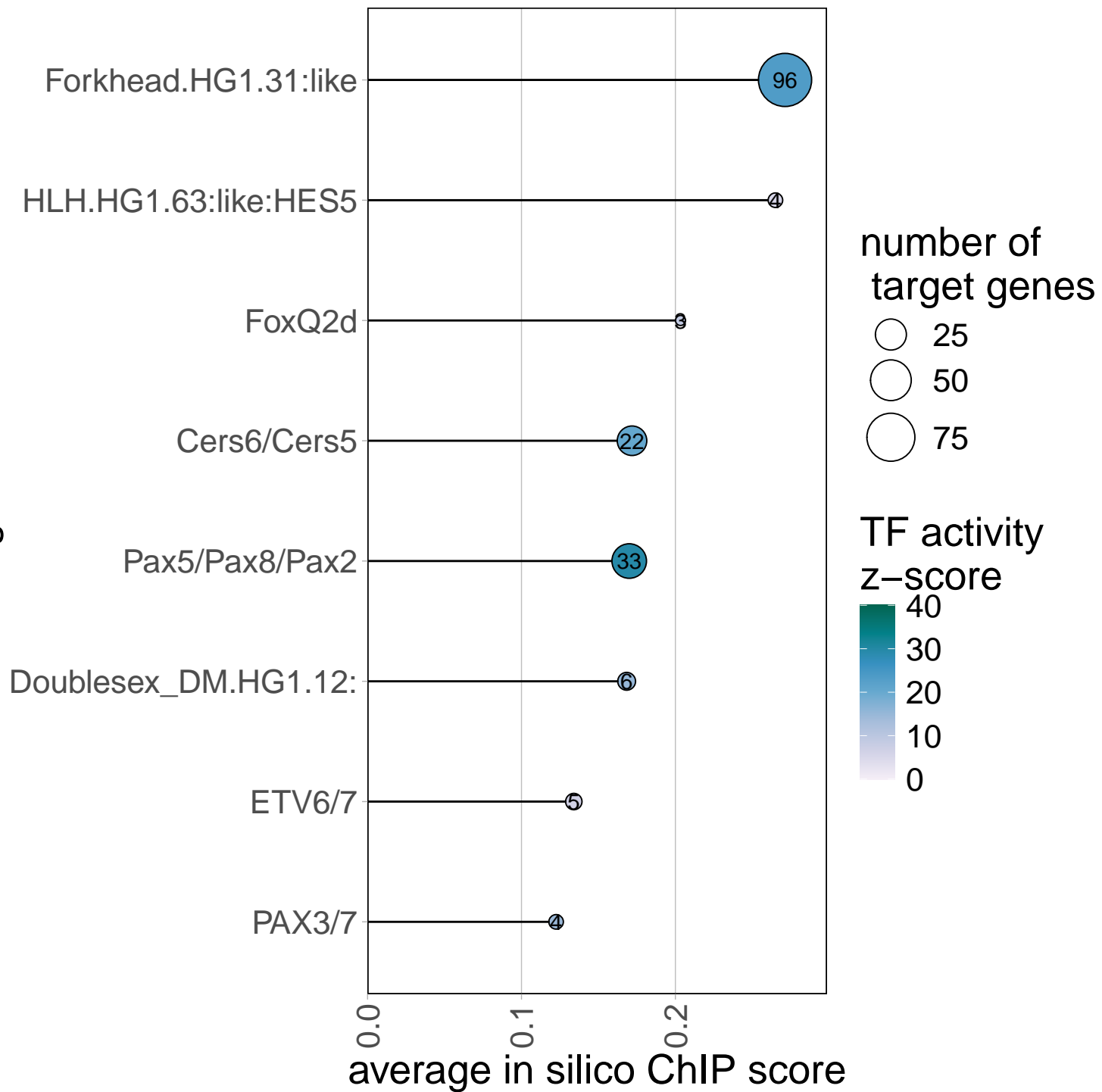
epidermis_1_module_3

gene



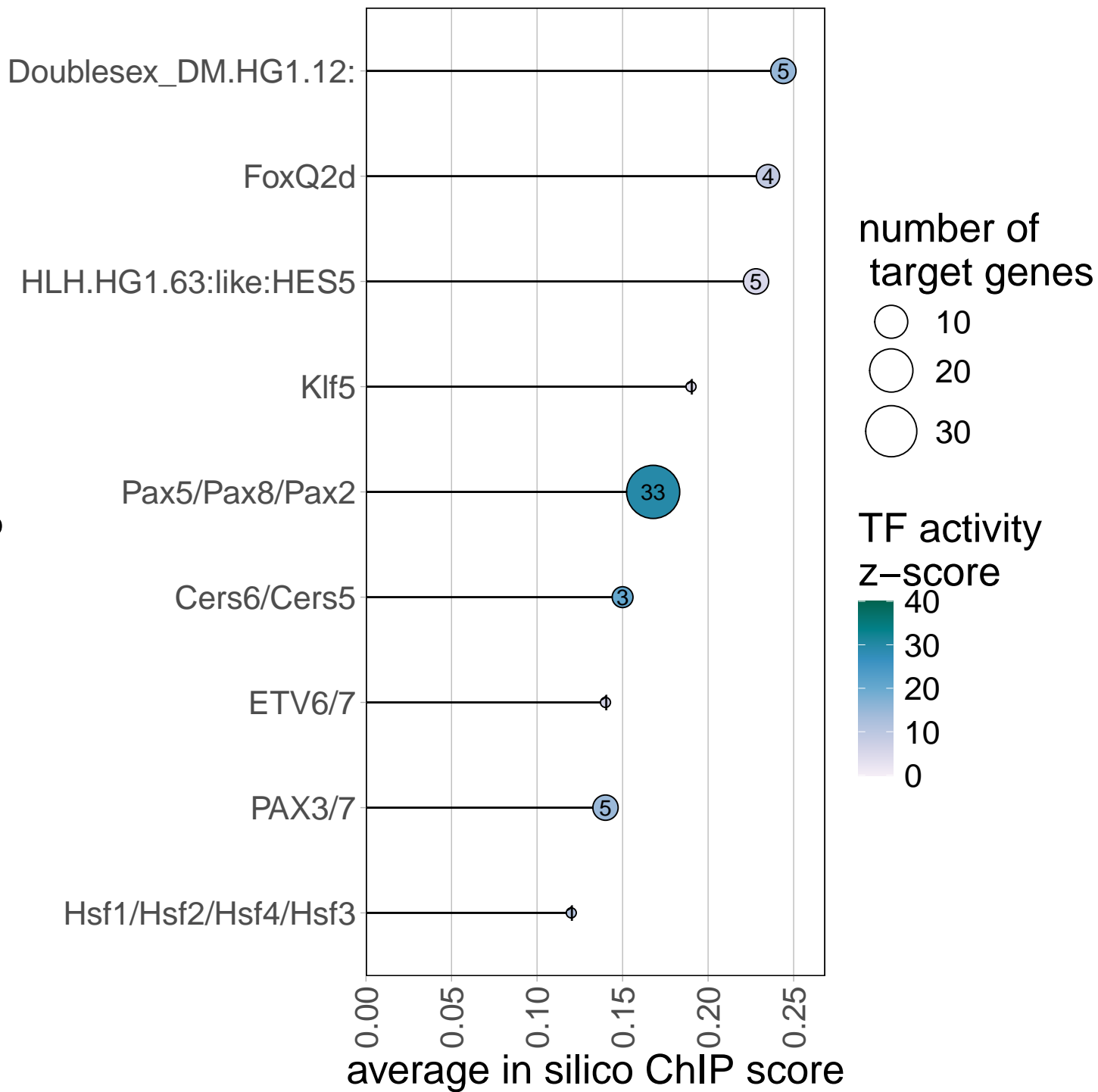
epidermis_1_module_4

gene



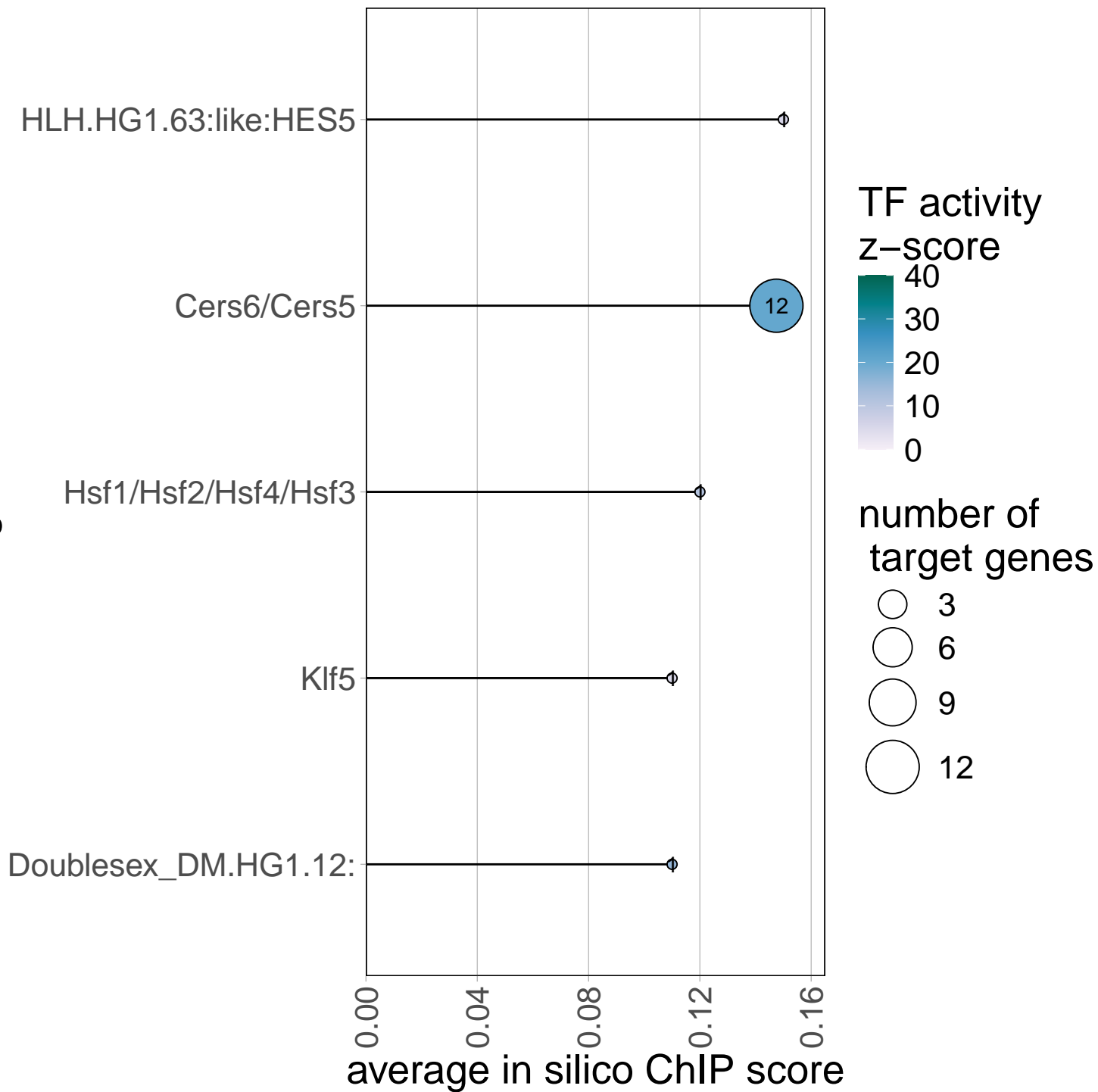
epidermis_1_module_5

gene



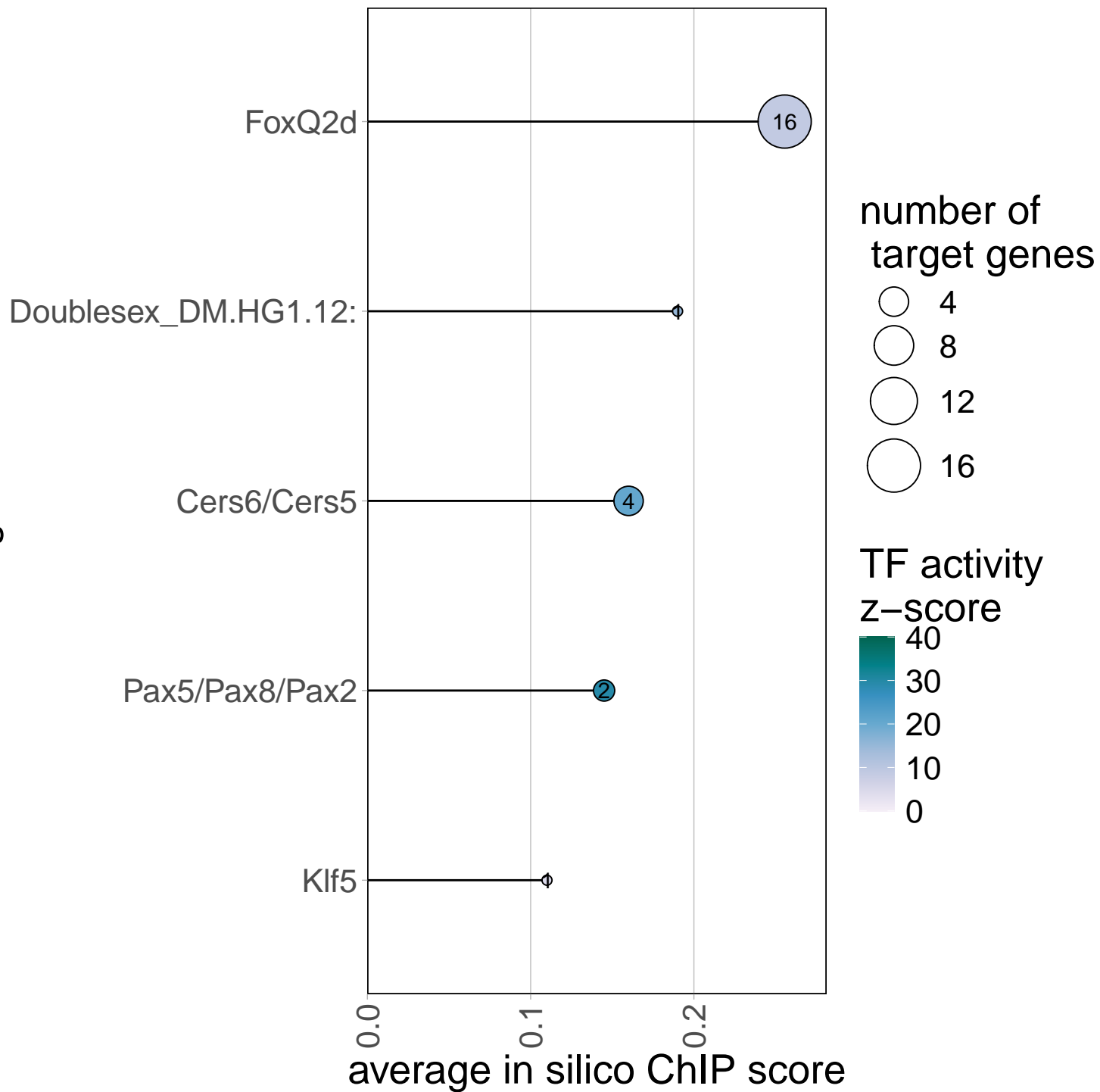
epidermis_1_module_6

gene



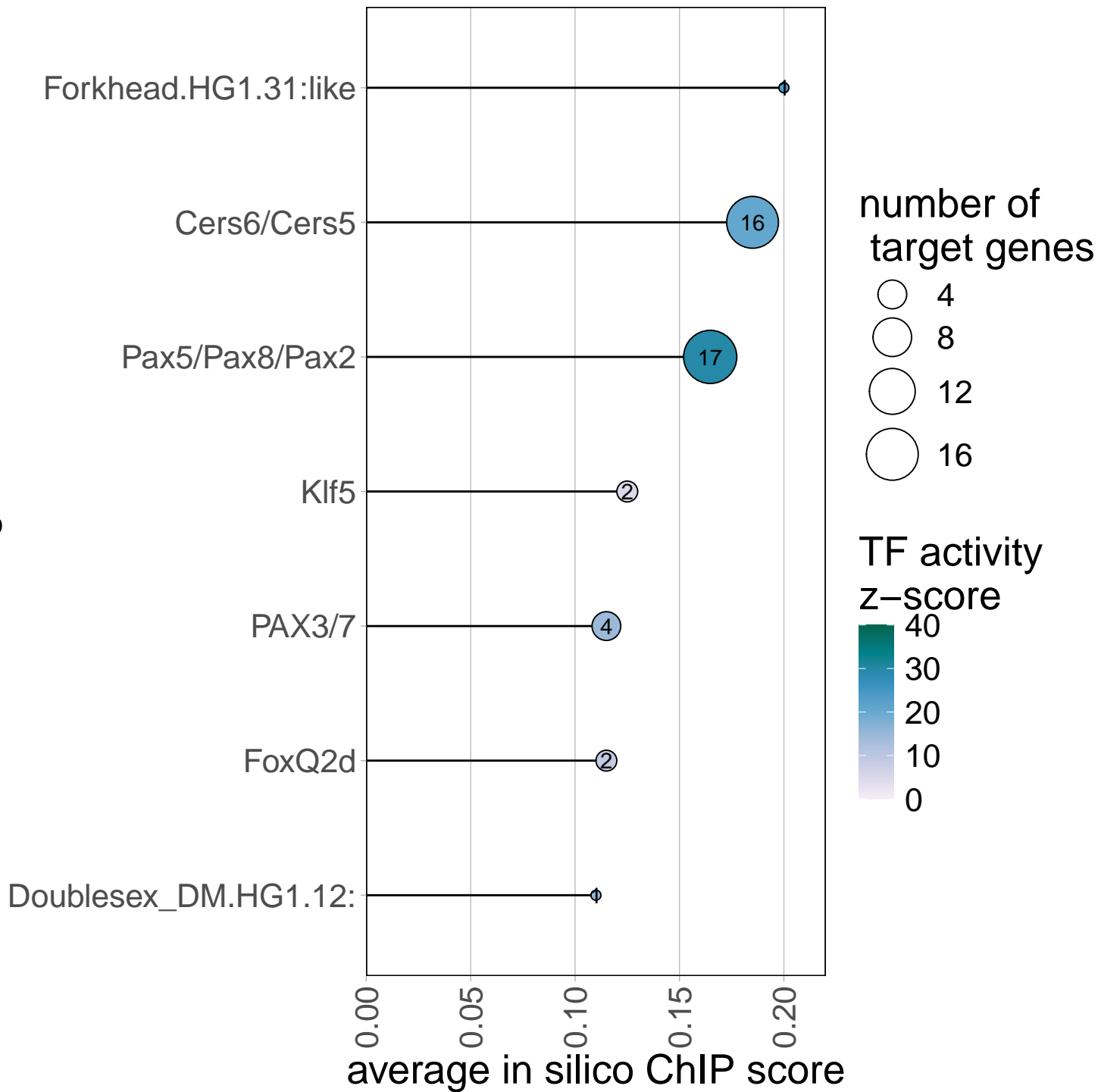
epidermis_1_module_7

gene



epidermis_1_module_8

gene



epidermis_2_module_1

gene

Doublesex_DM.HG1.12:

10

Pax5/Pax8/Pax2

Forkhead.HG1.31:like

Cers6/Cers5

FoxQ2d

average in silico ChIP score

number of
target genes

2.5

5.0

7.5

10.0

TF activity

z-score

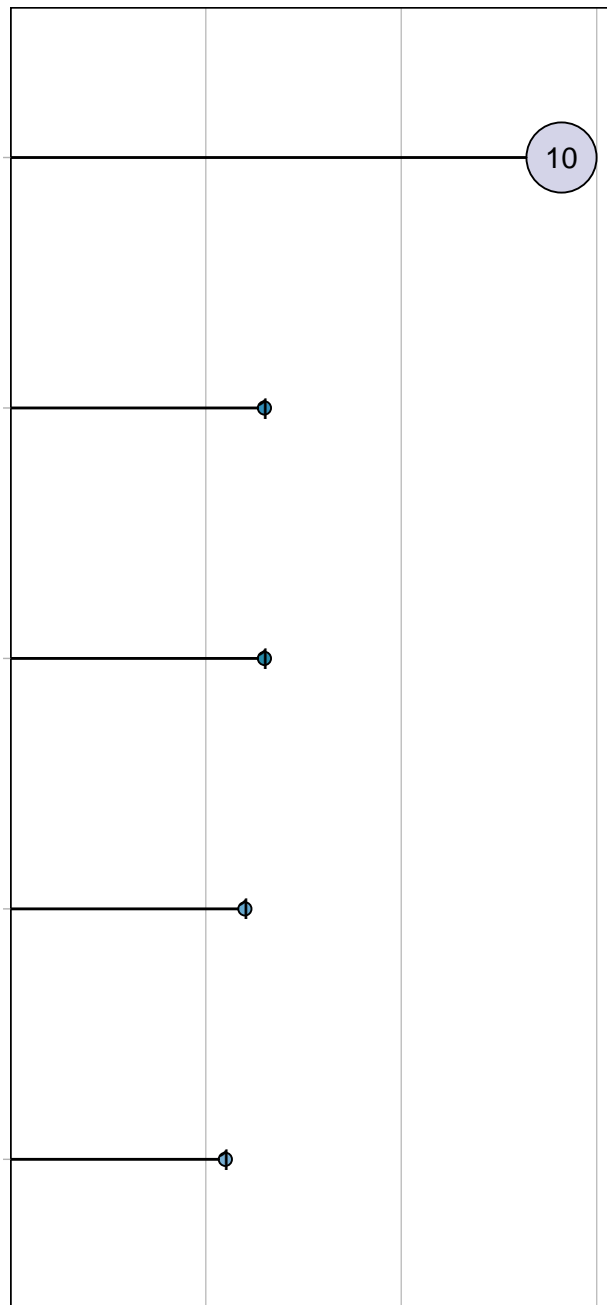
40

30

20

10

0



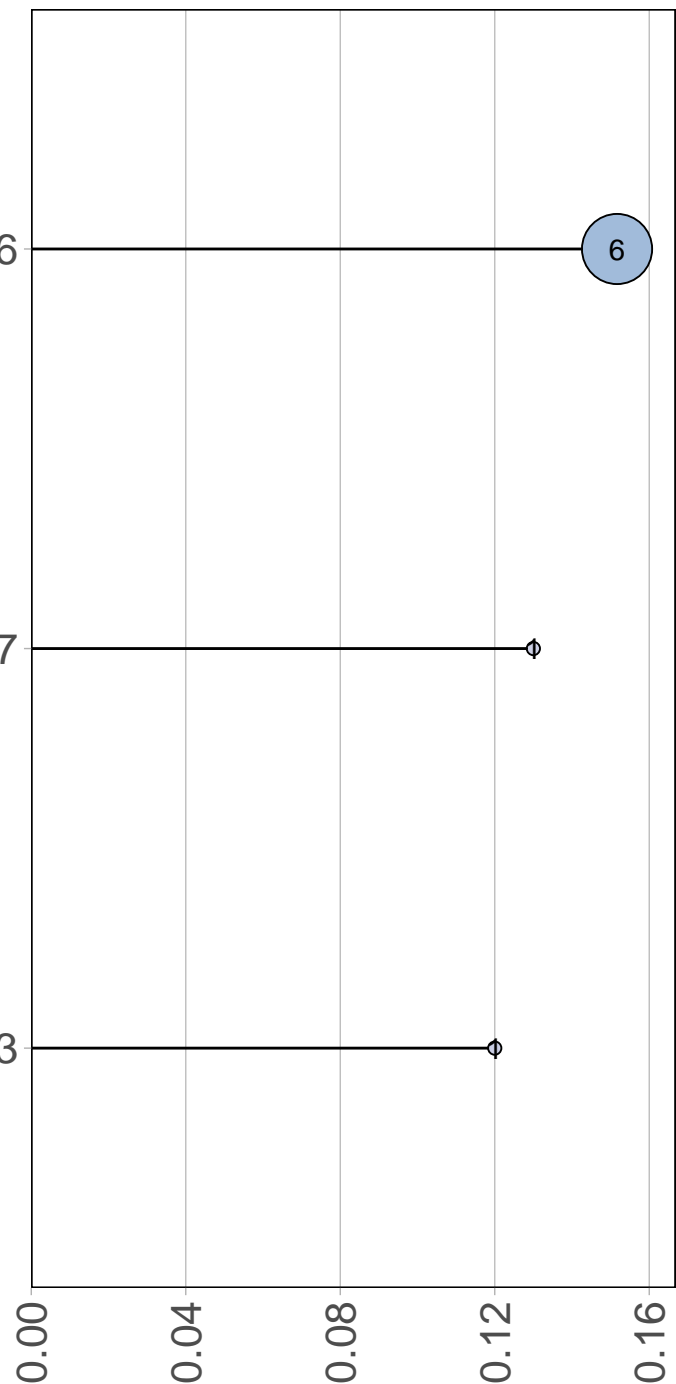
epidermis_2_module_2

gene

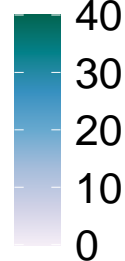
Zfp236/Zfp574/Zfp526

ETV6/7

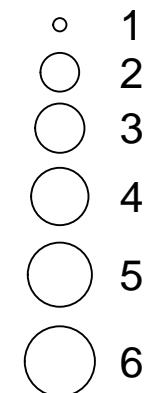
SoxB2/Sox3



TF activity
z-score

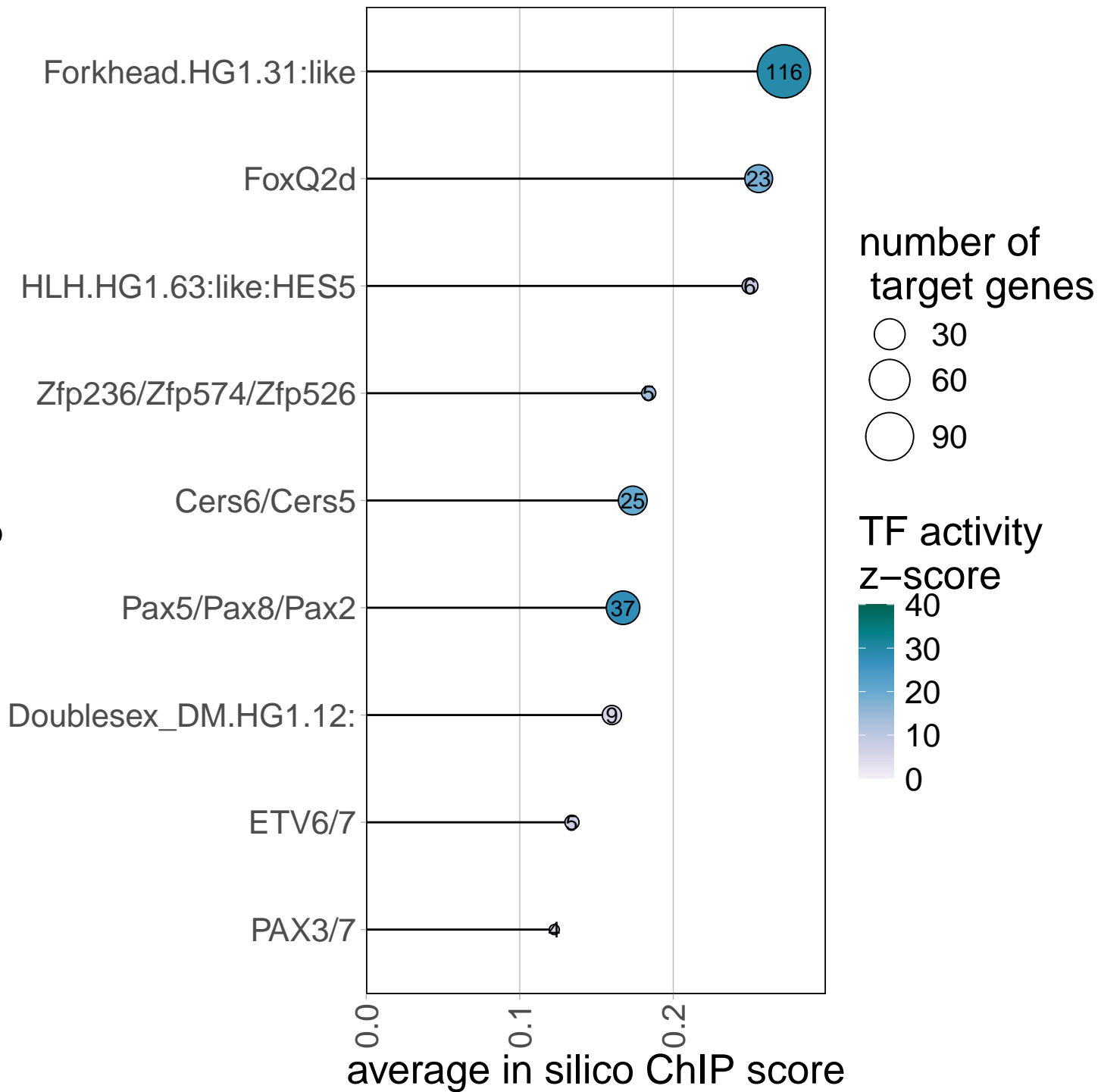


number of
target genes



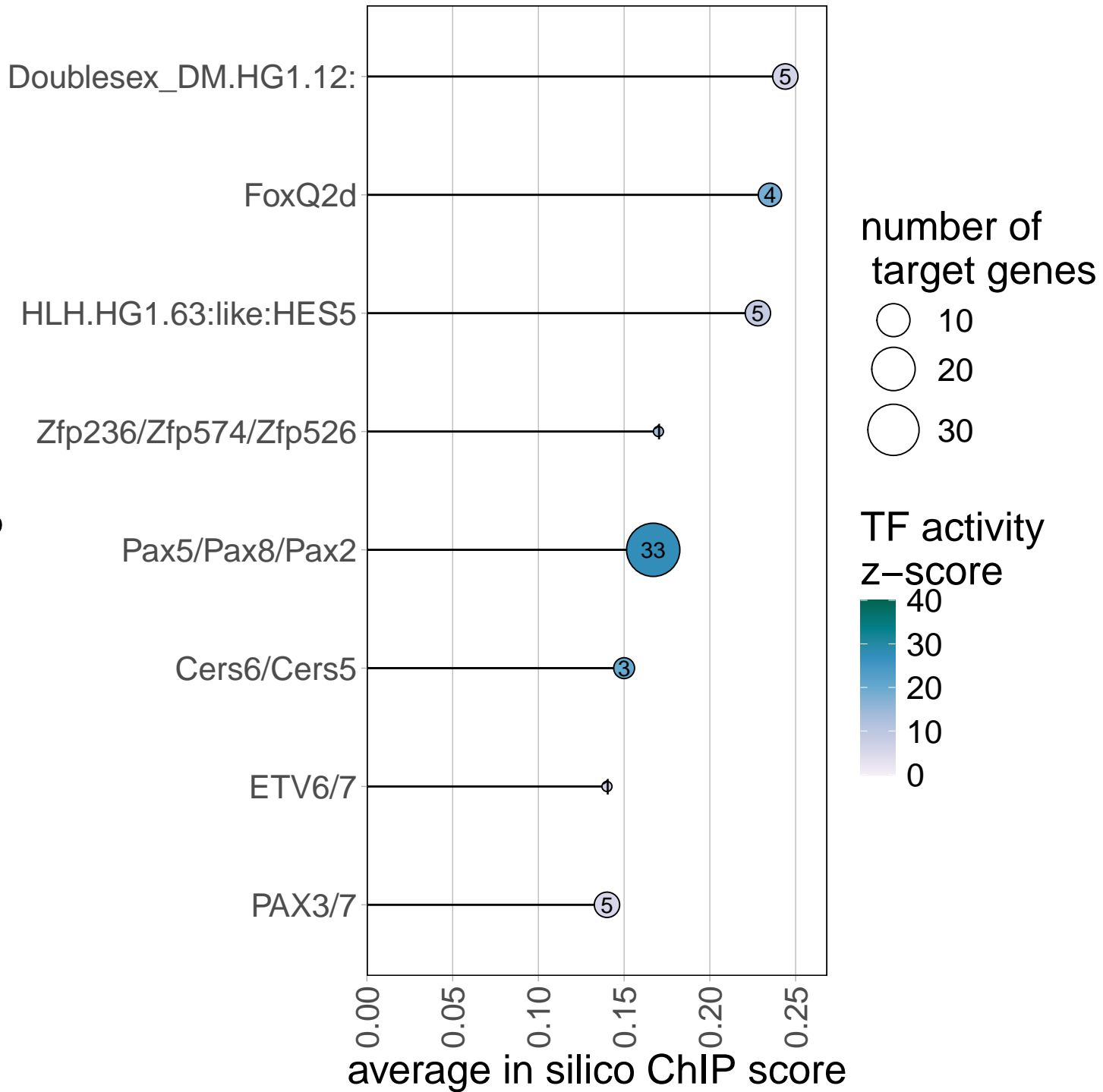
epidermis_2_module_3

gene



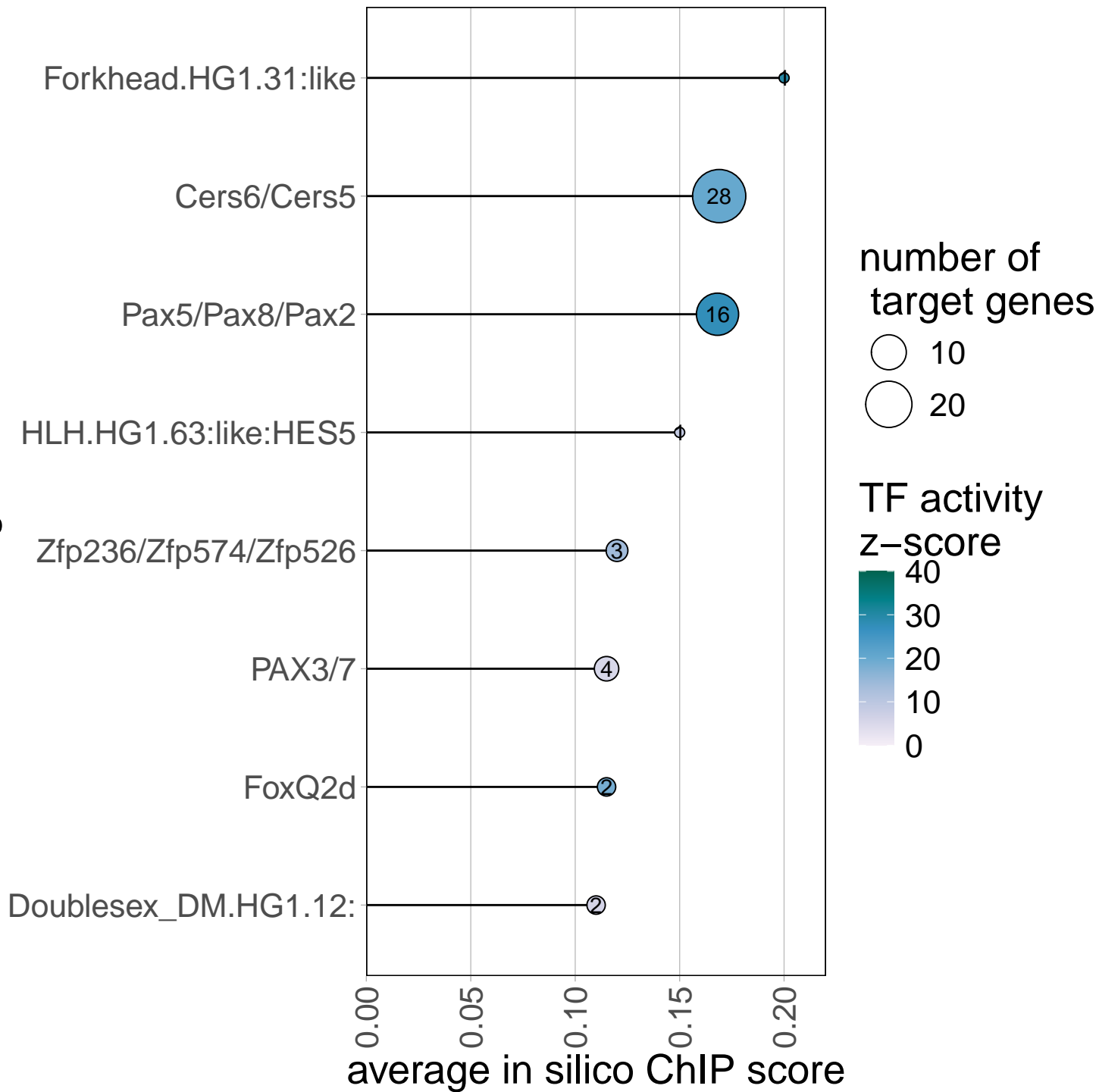
epidermis_2_module_4

gene



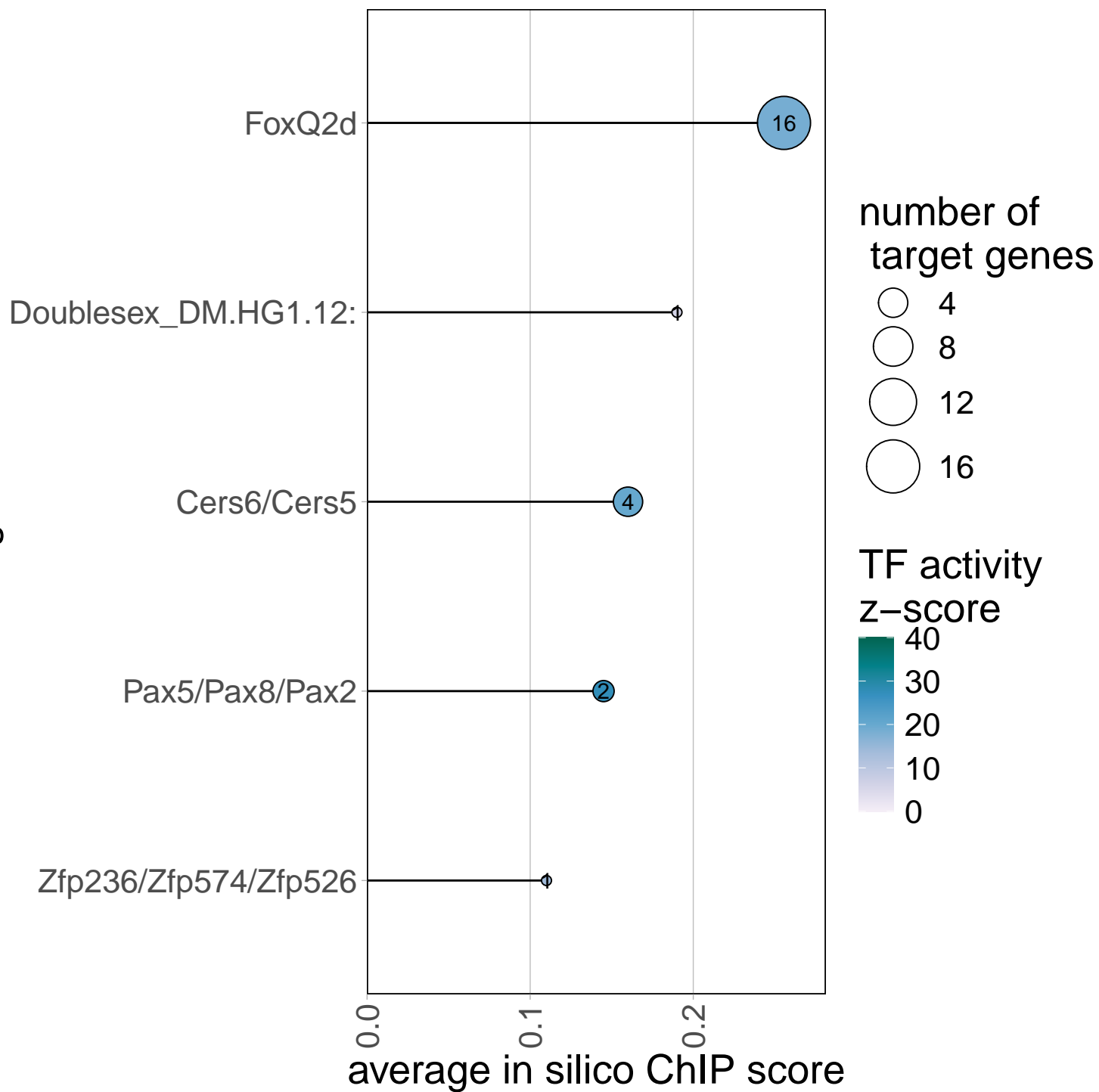
epidermis_2_module_5

gene



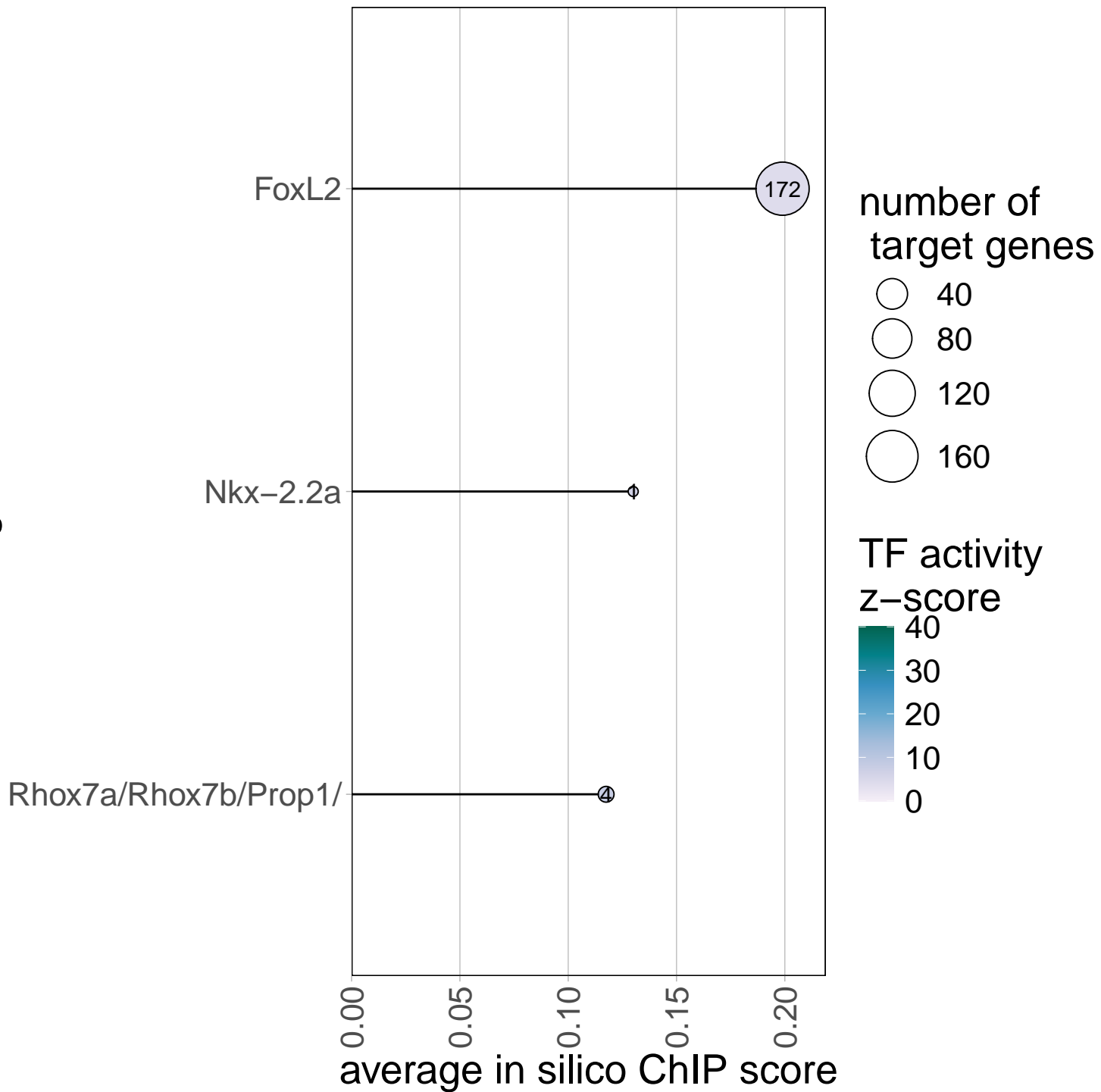
epidermis_2_module_6

gene



precursors_PGC_module_1

gene



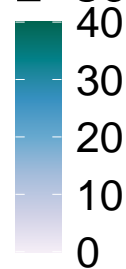
precursors_PGC_module_2

gene

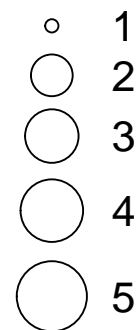
Rhox7a/Rhox7b/Prop1/

FoxL2

TF activity
z-score



number of
target genes

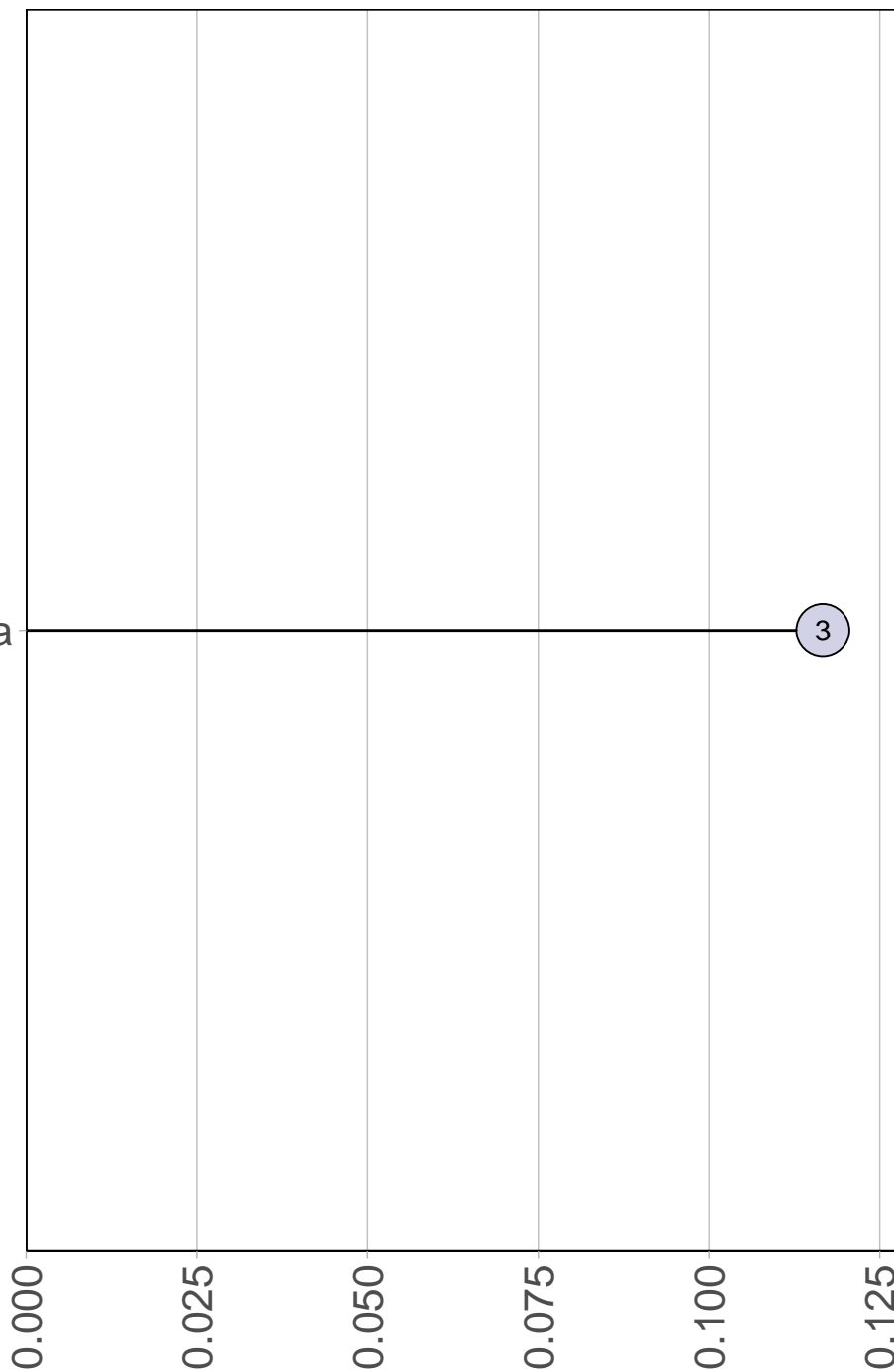


0.00 0.04 0.08 0.12 0.16
average in silico ChIP score

precursors_PGC_module_3

gene

Nkx-2.2a



average in silico ChIP score

number of
target genes

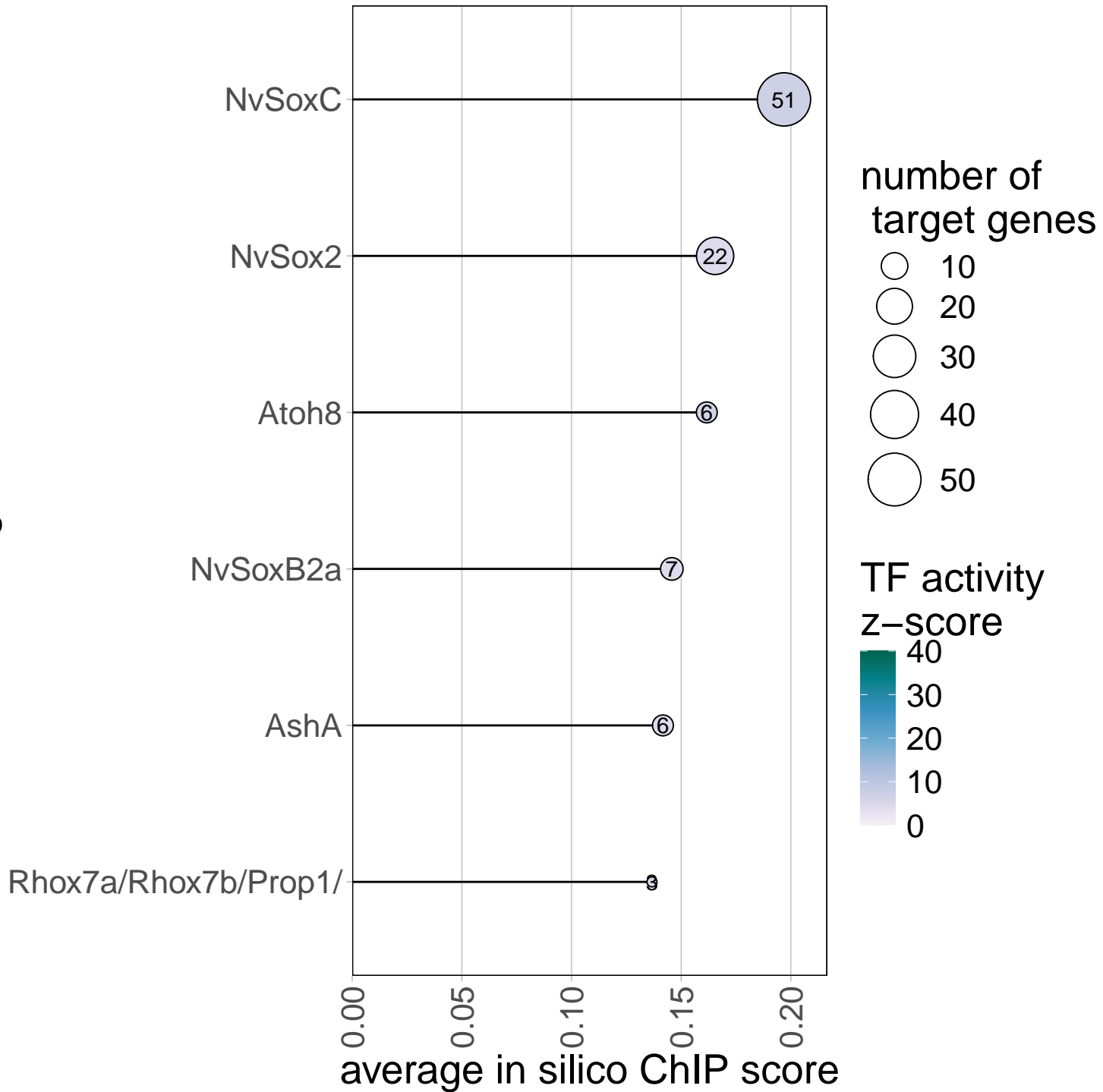
○ 3

TF activity
z-score

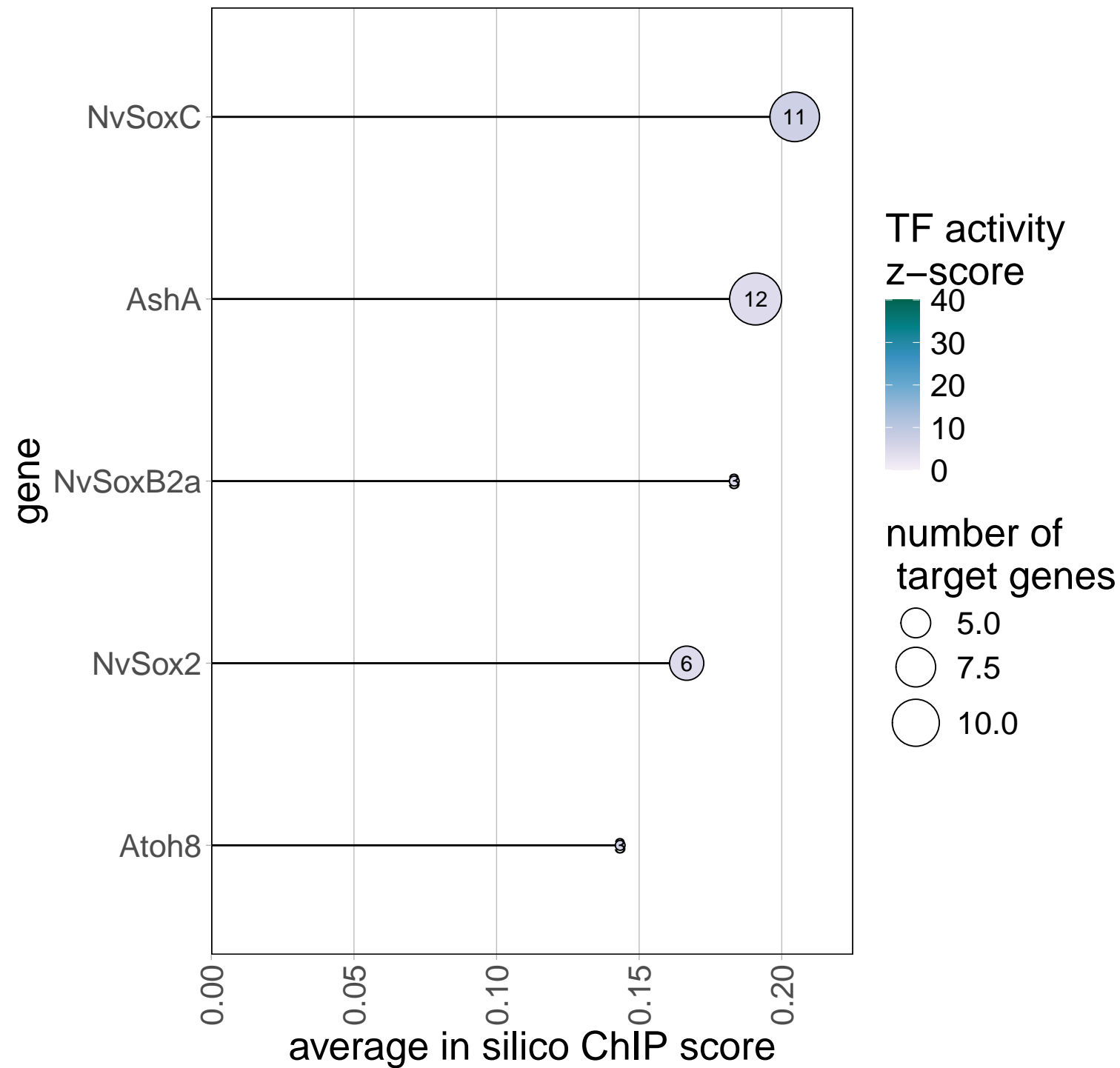
40
30
20
10
0

precursors_endoNPC_module_1

gene

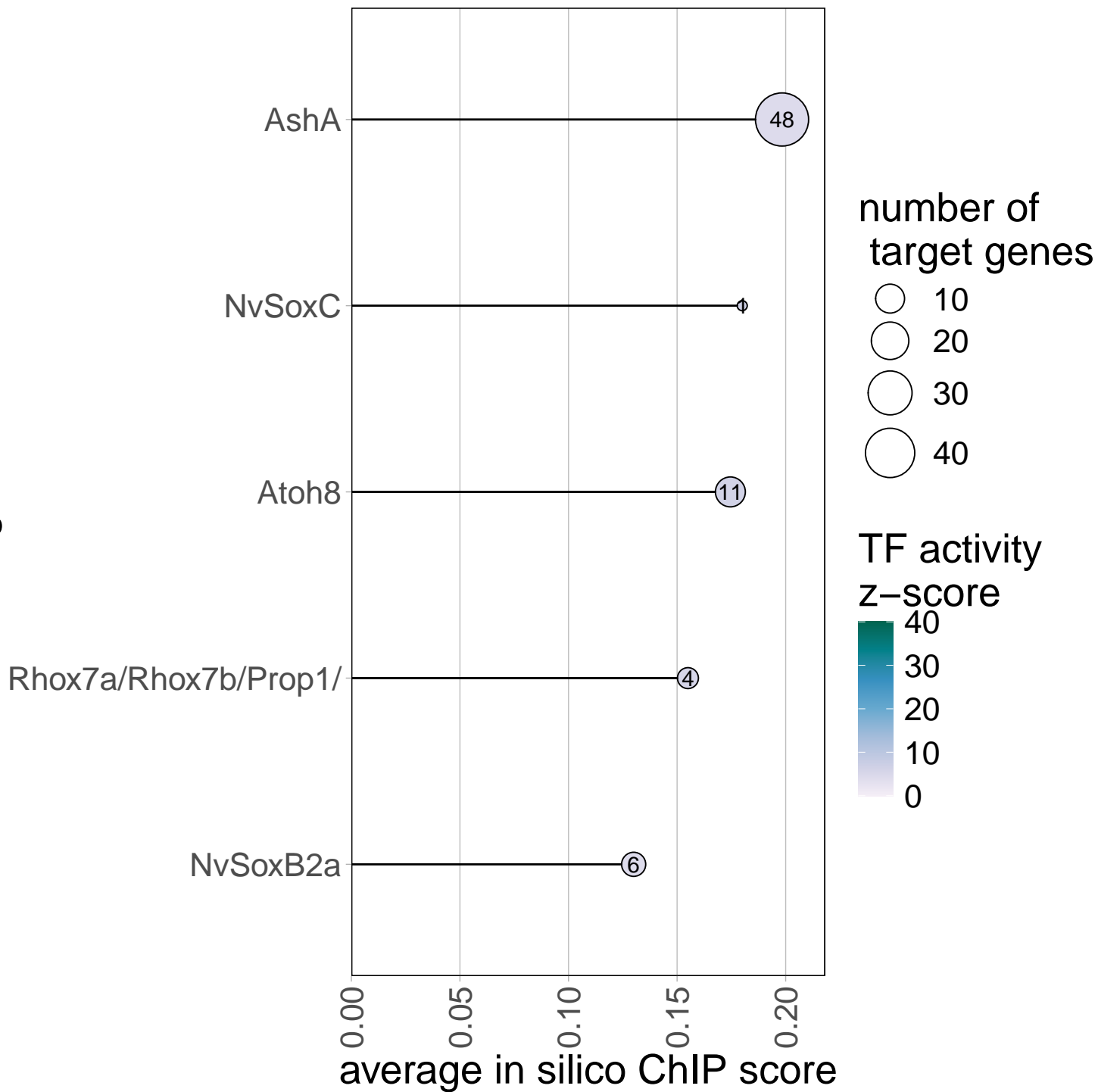


precursors_endoNPC_module_2



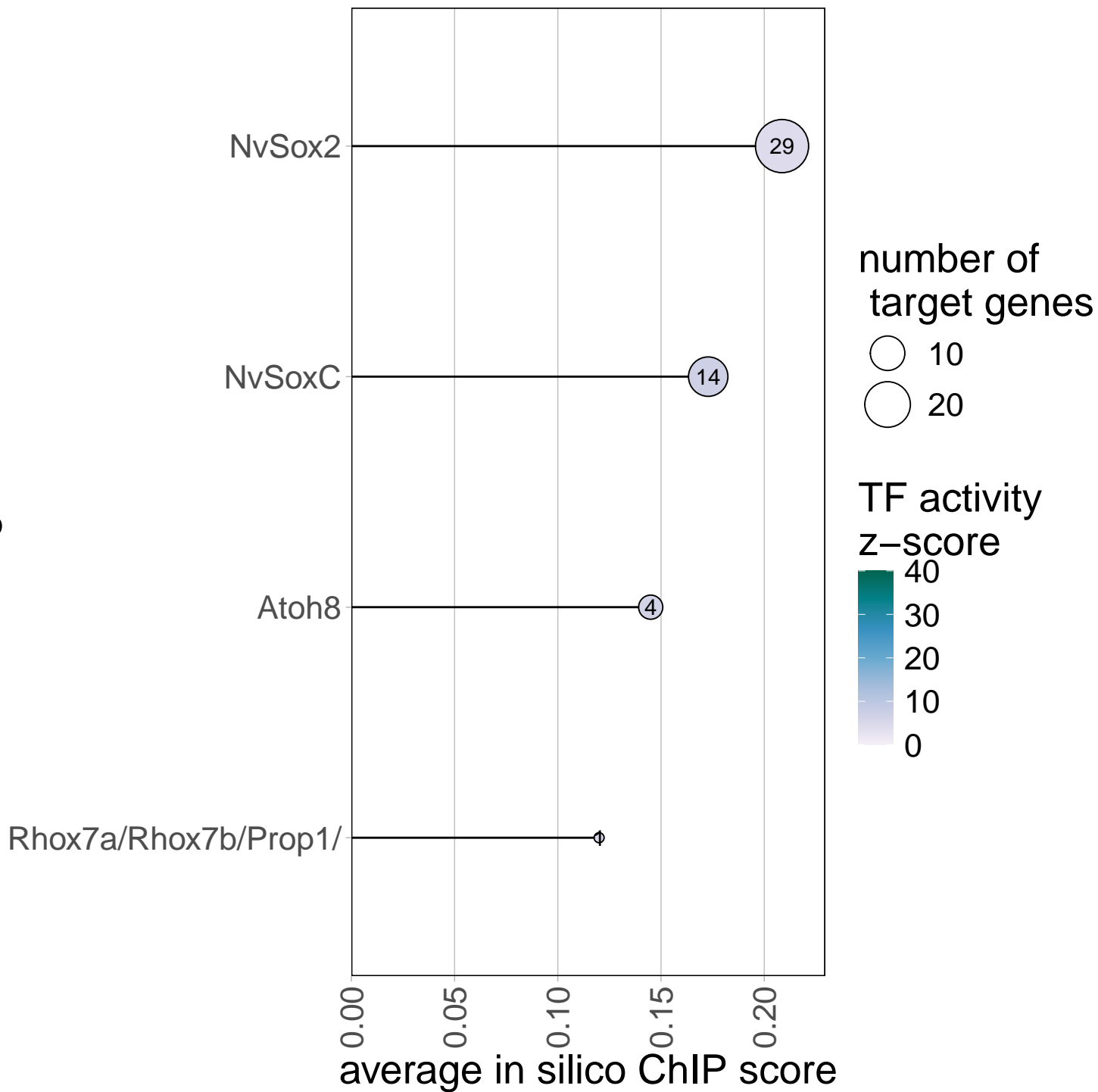
precursors_endoNPC_module_3

gene



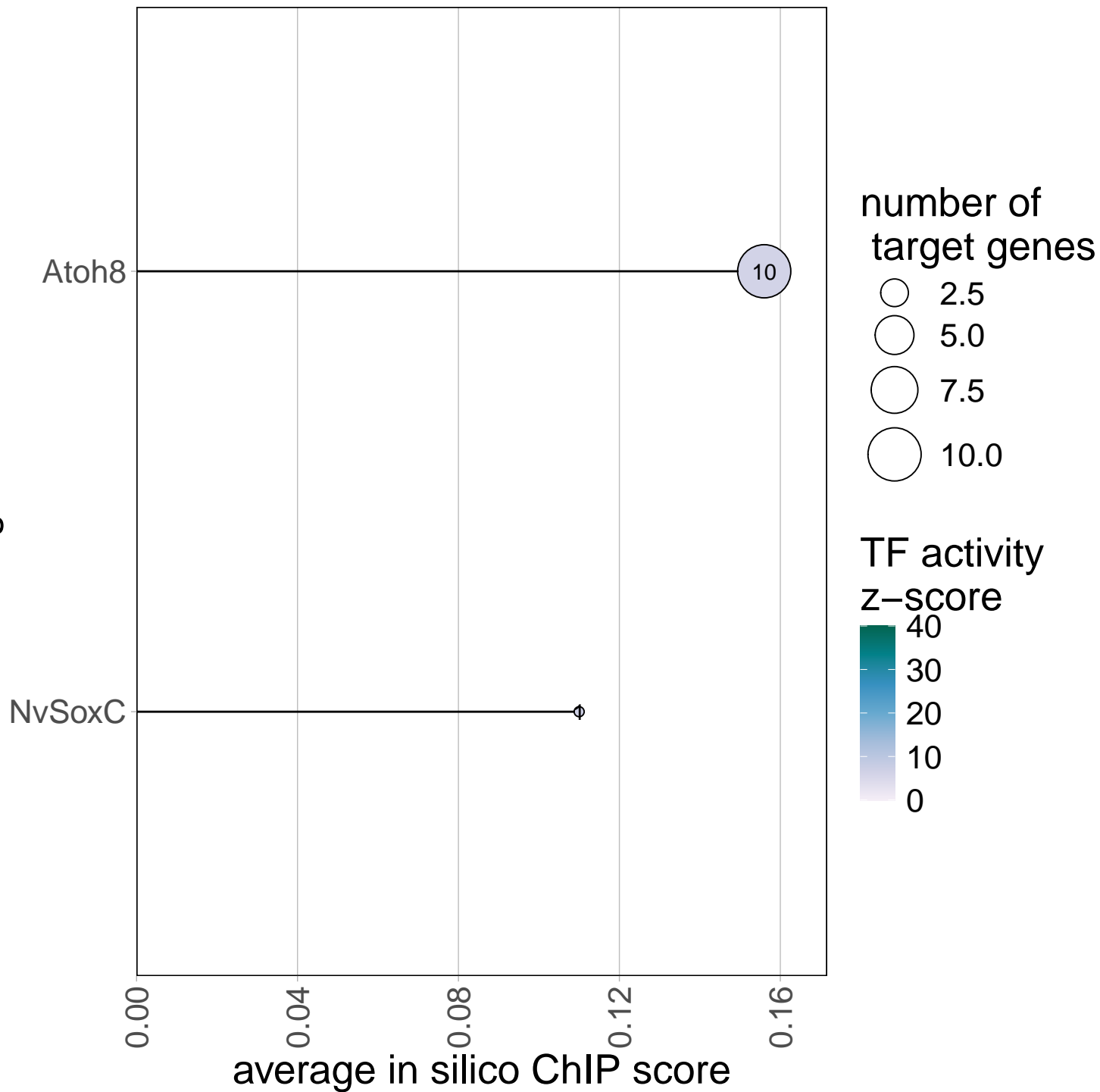
precursors_endoNPC_module_4

gene



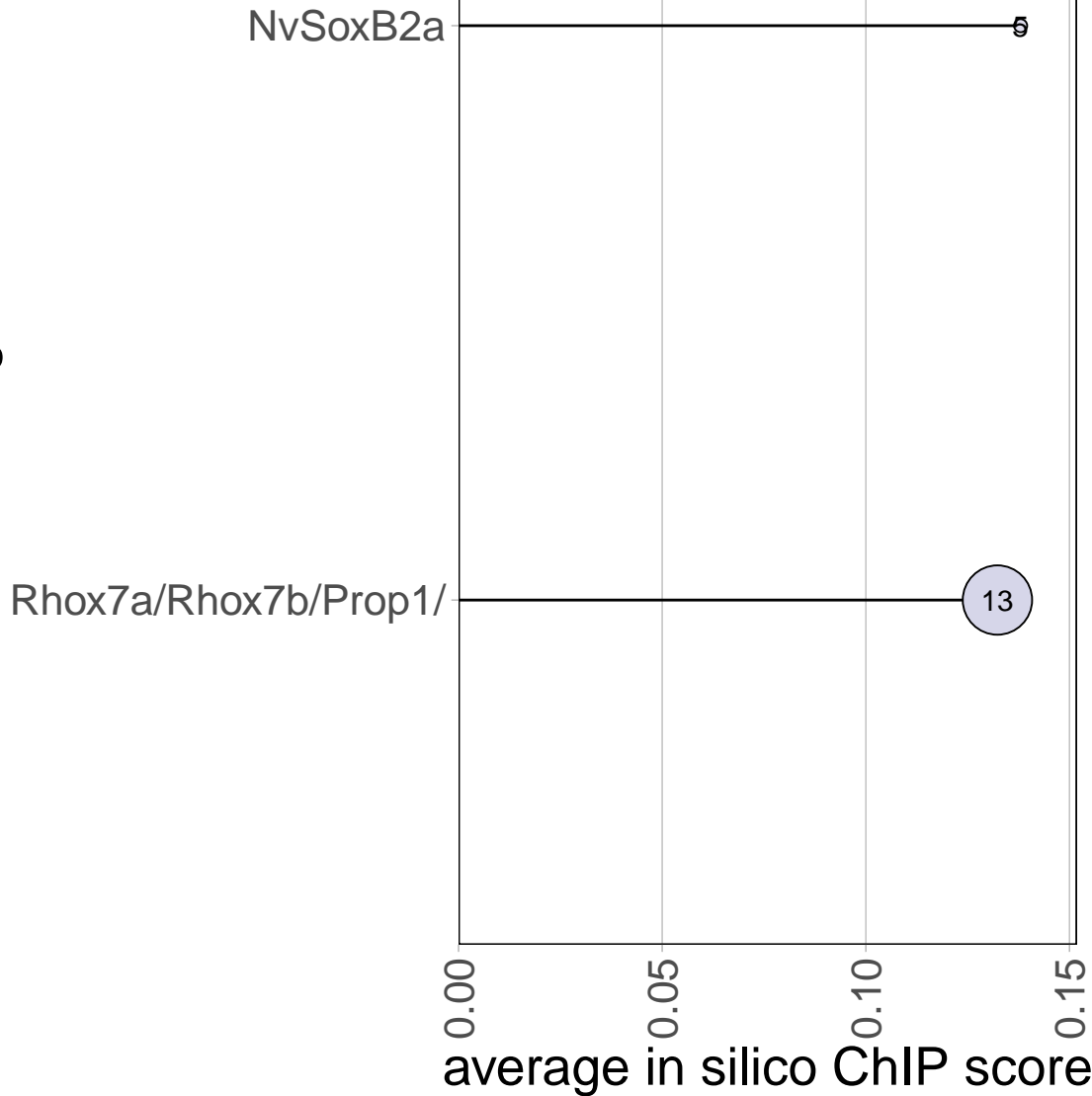
precursors_endoNPC_module_5

gene

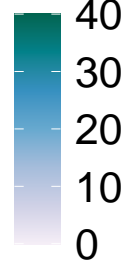


precursors_endoNPC_module_6

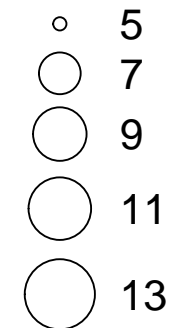
gene



TF activity
z-score

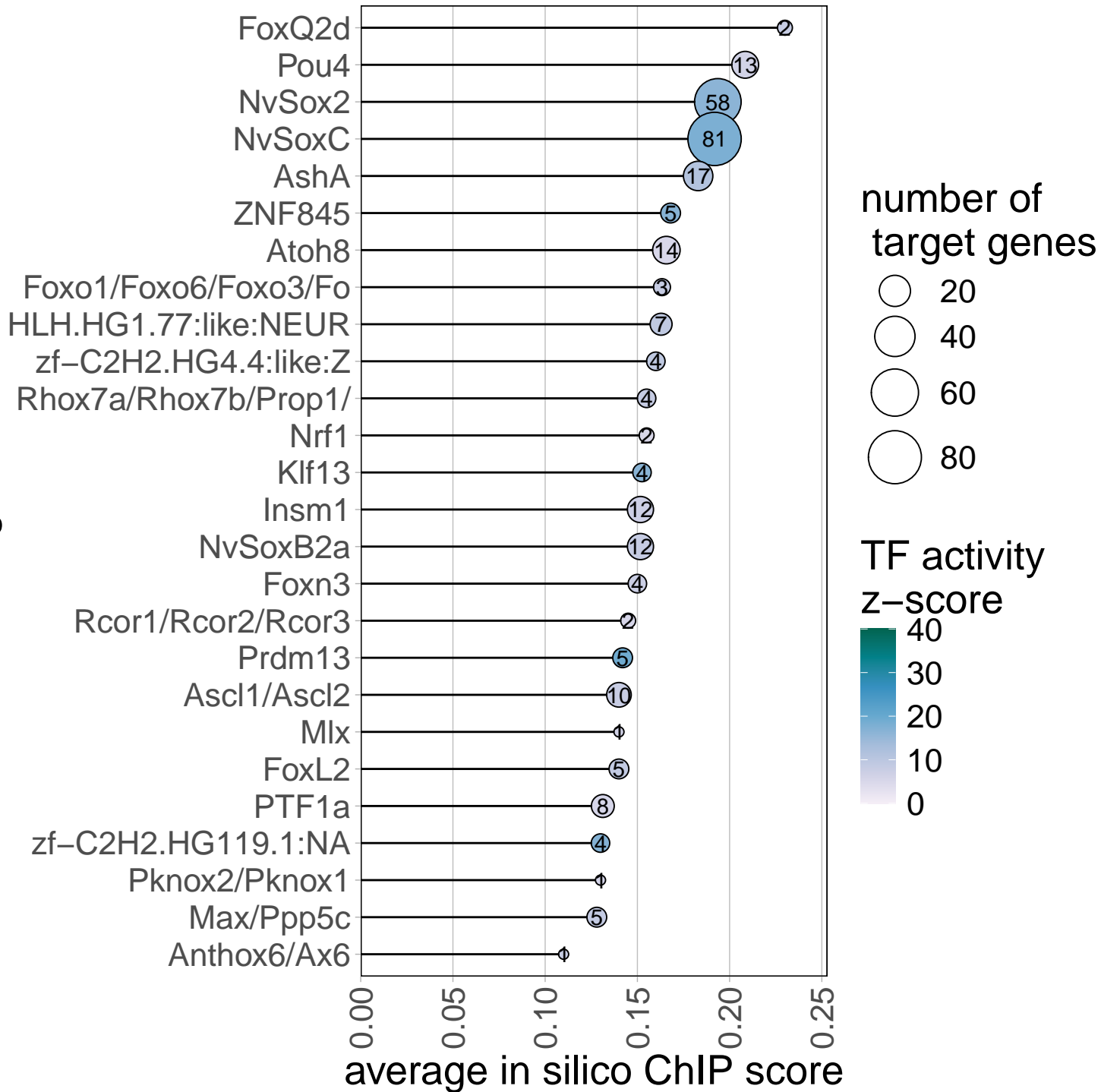


number of
target genes



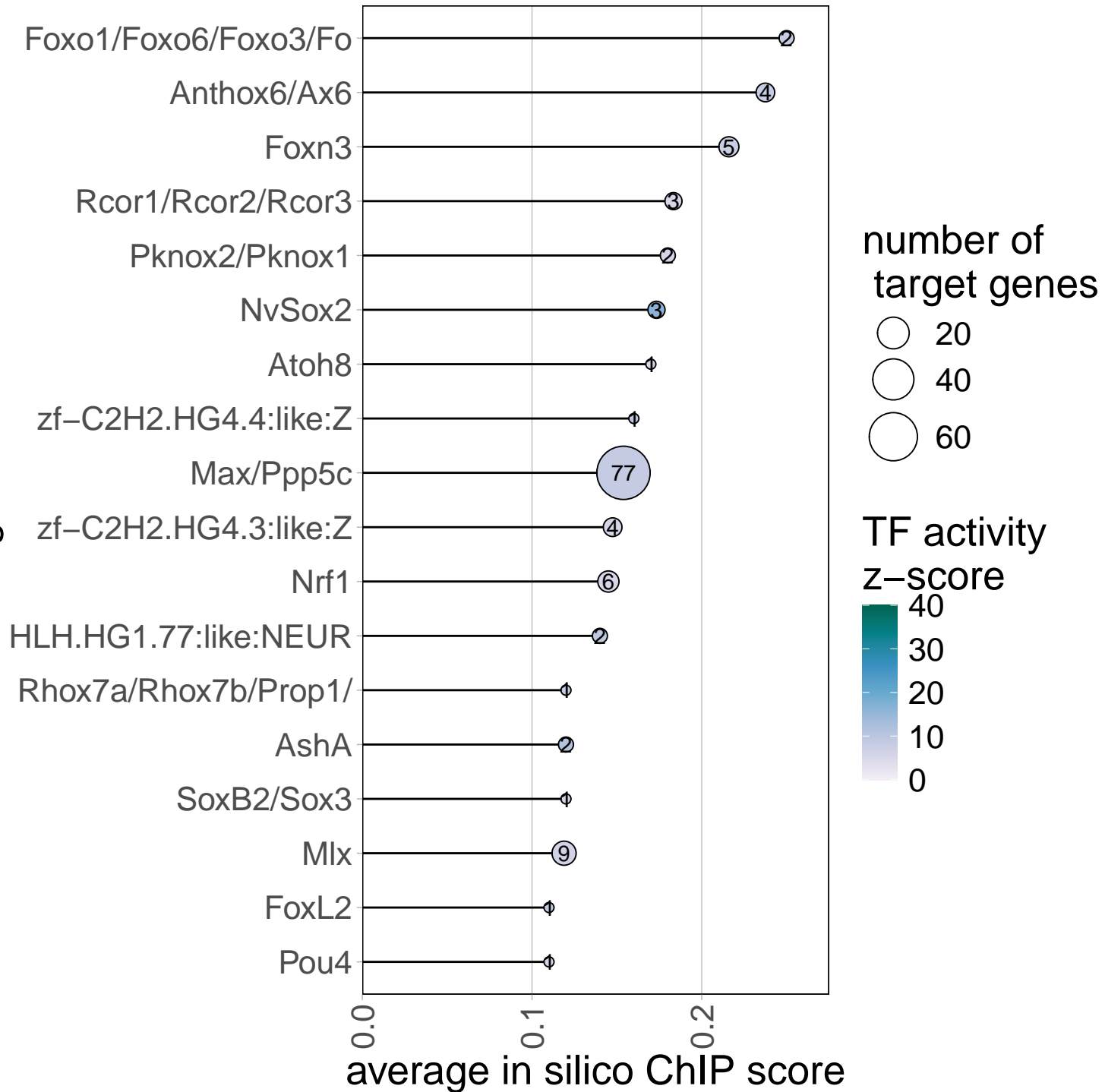
precursors_NPC_module_1

gene



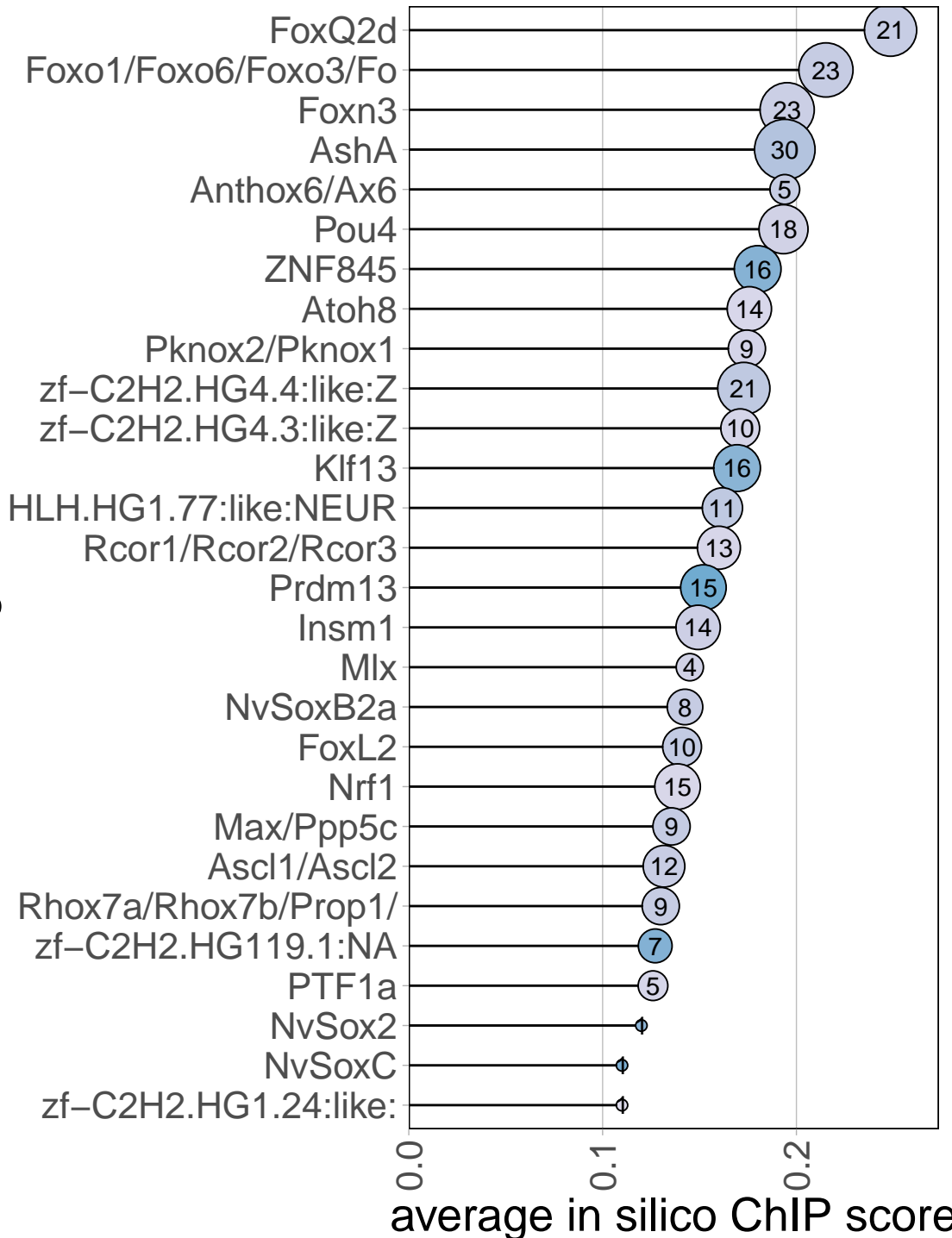
precursors_NPC_module_2

gene

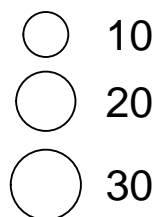


precursors_NPC_module_3

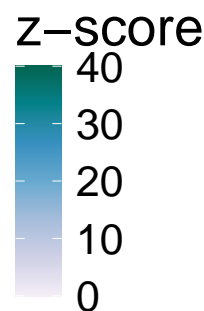
gene



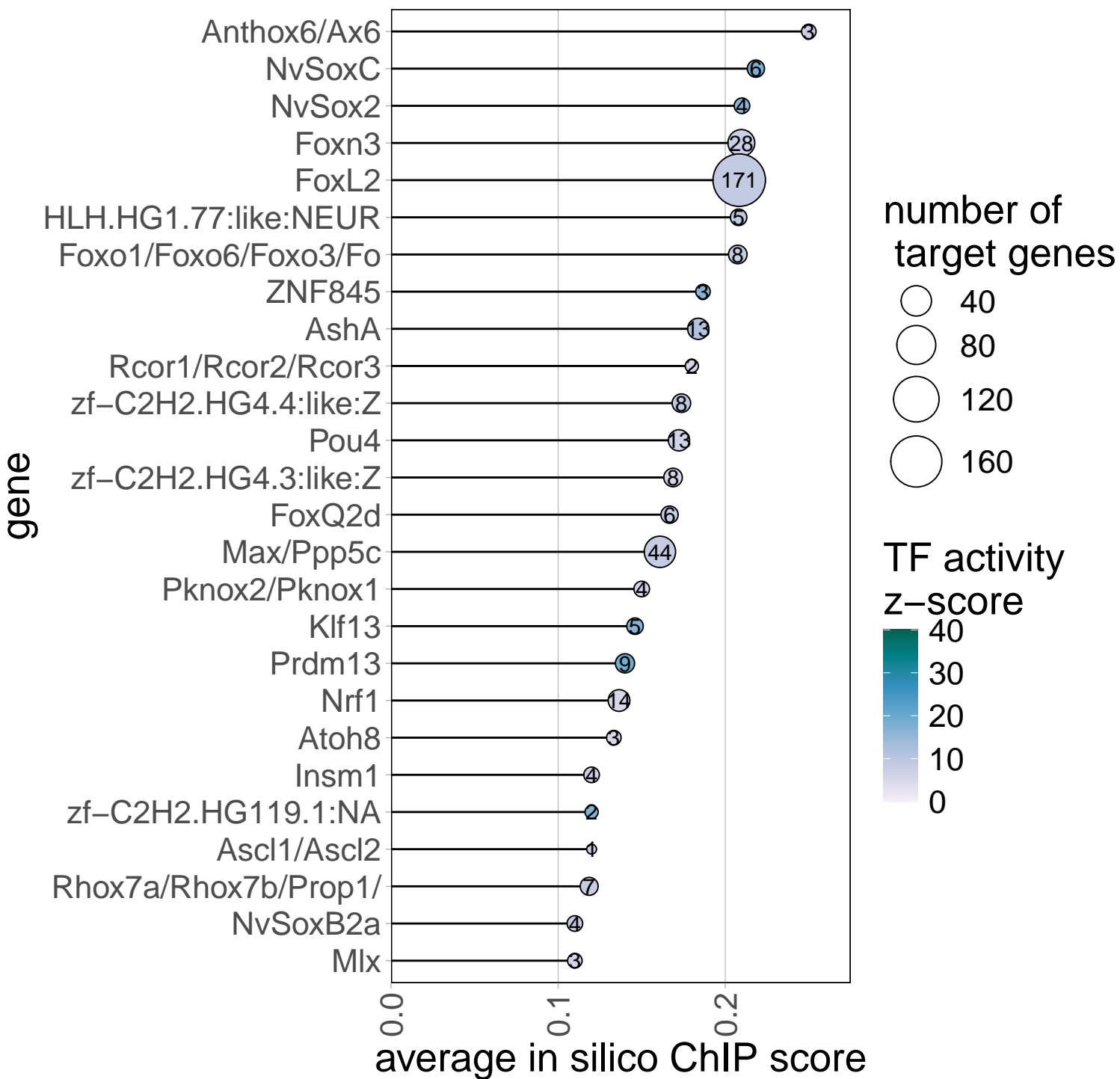
number of target genes



TF activity

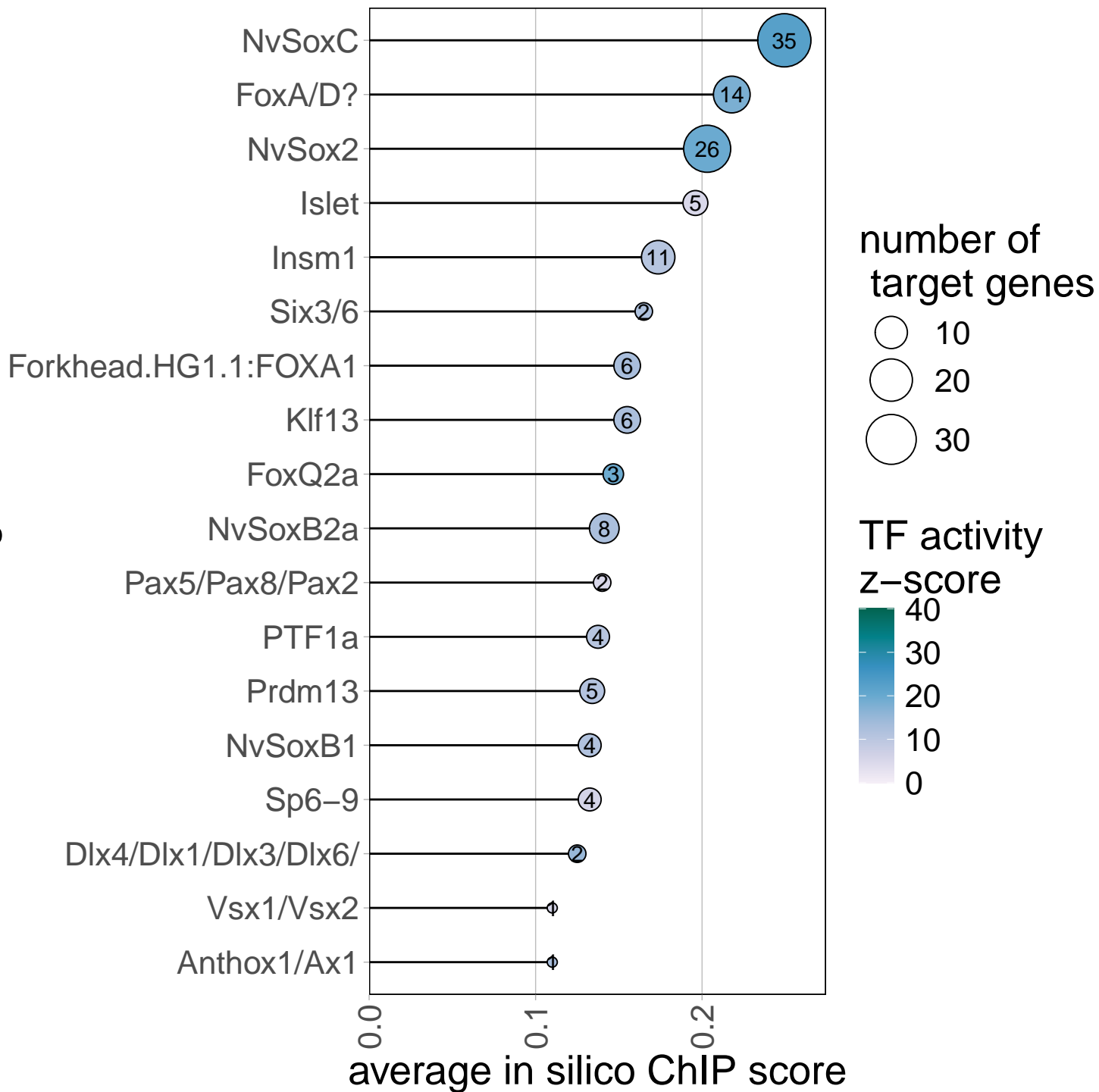


precursors_NPC_module_4



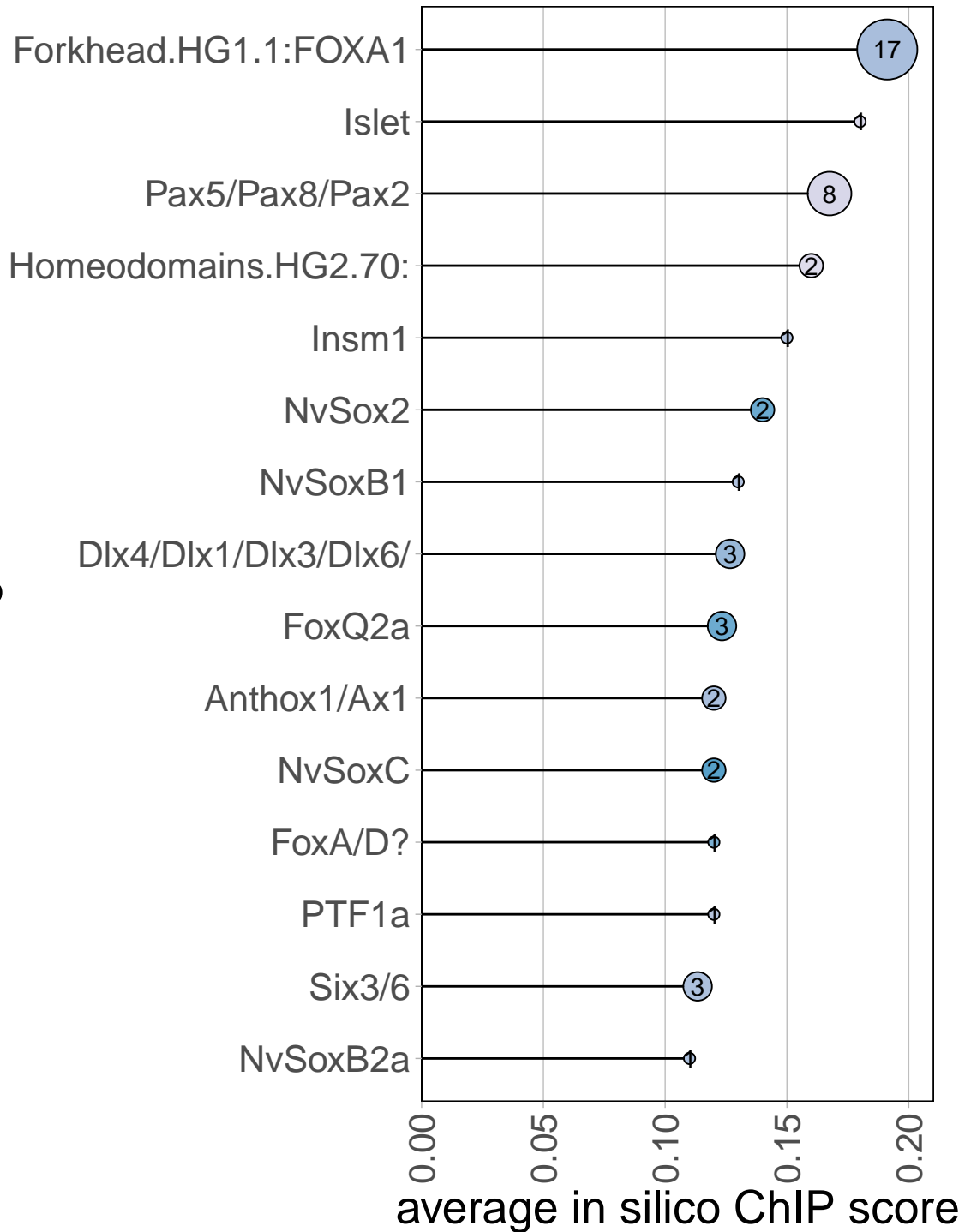
NPC_1_module_1

gene

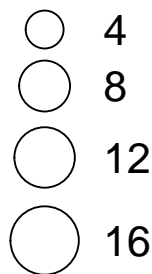


NPC_1_module_2

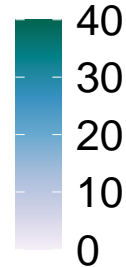
gene



number of target genes

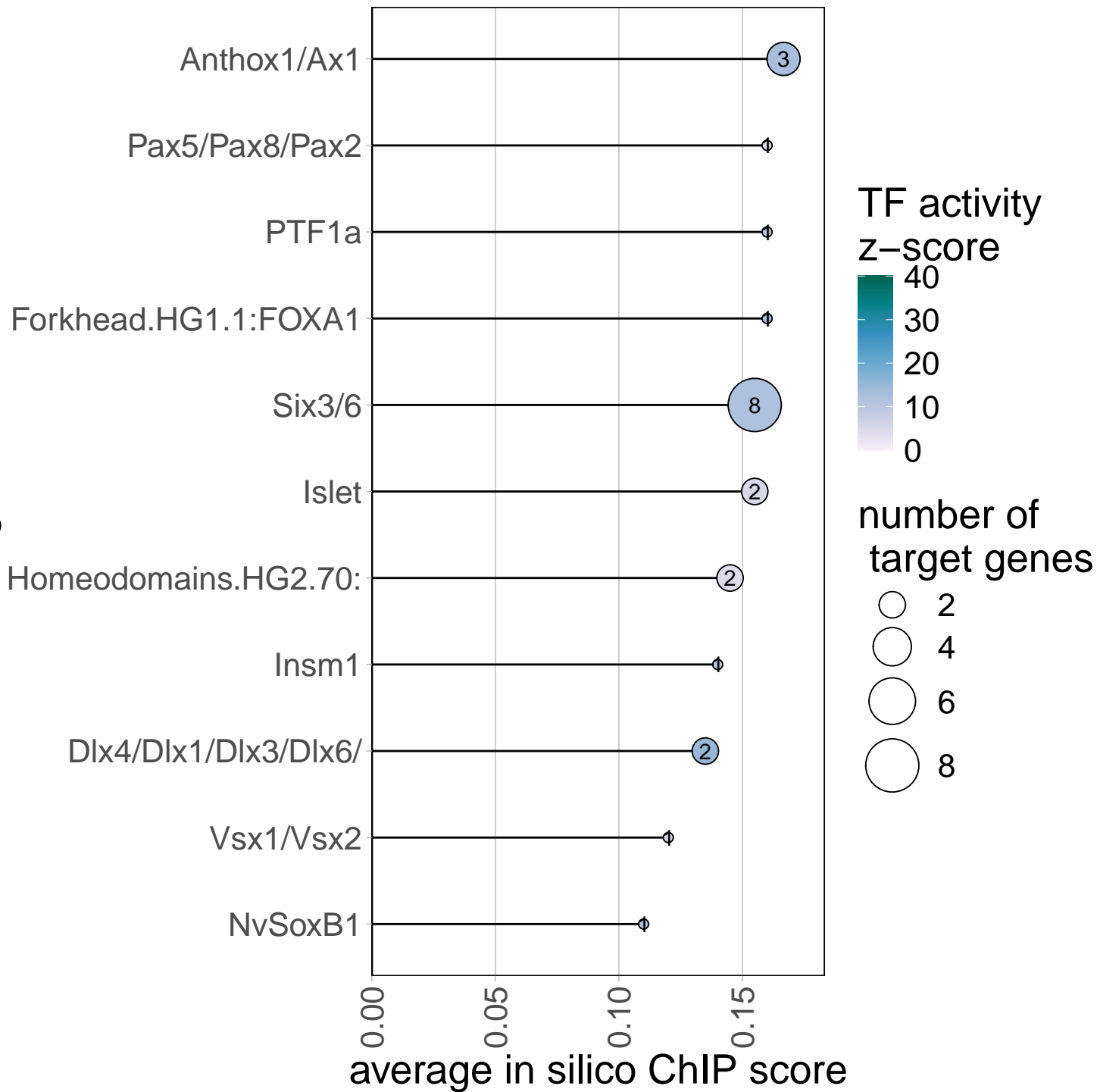


TF activity z-score



NPC_1_module_3

gene



NPC_1_module_4

gene

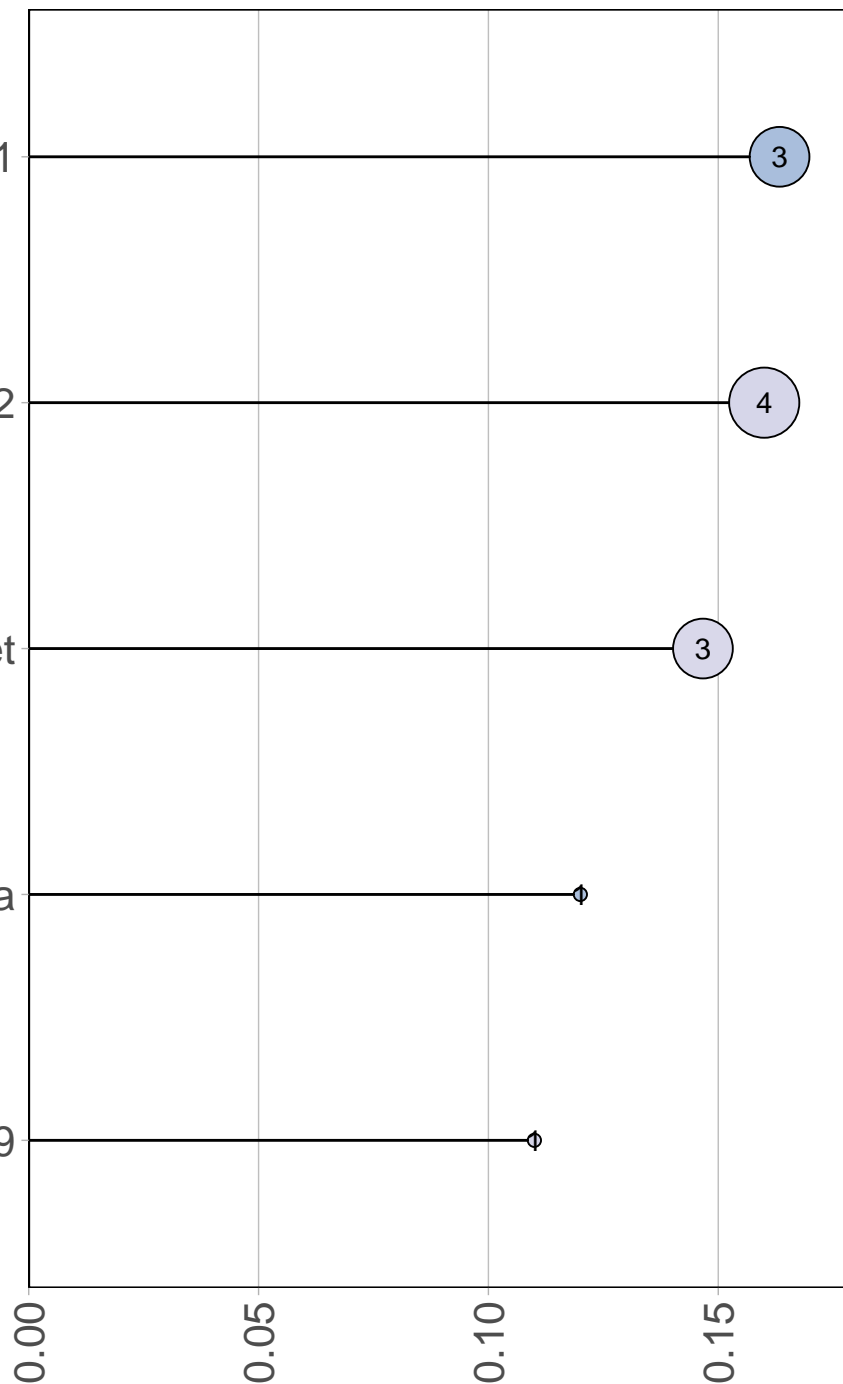
Anthox1/Ax1

Vsx1/Vsx2

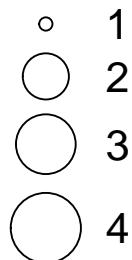
Islet

NvSoxB2a

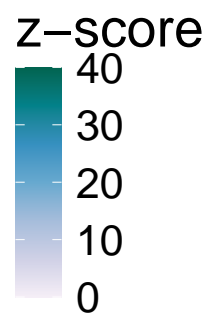
Sp6-9



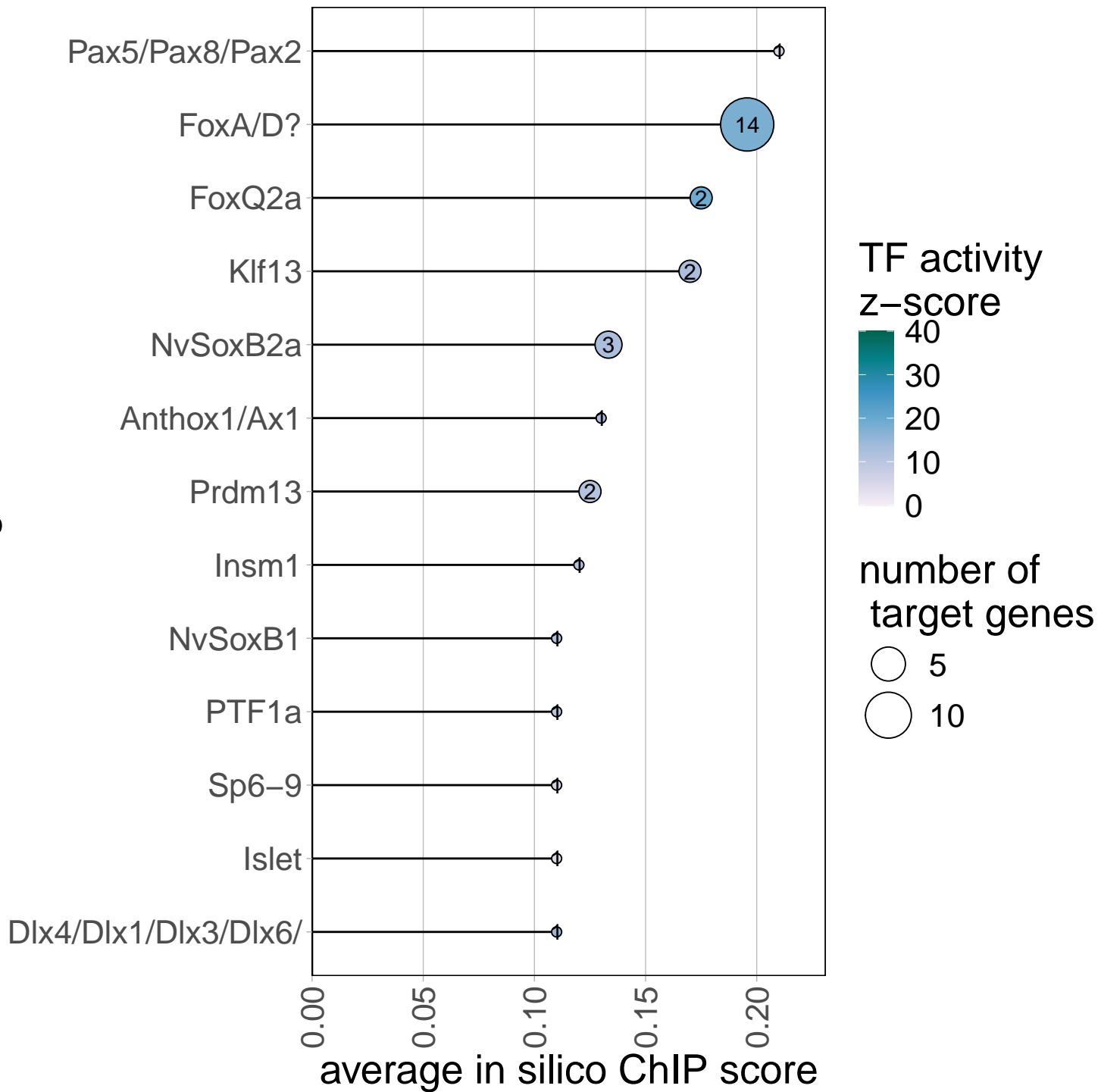
number of
target genes



TF activity

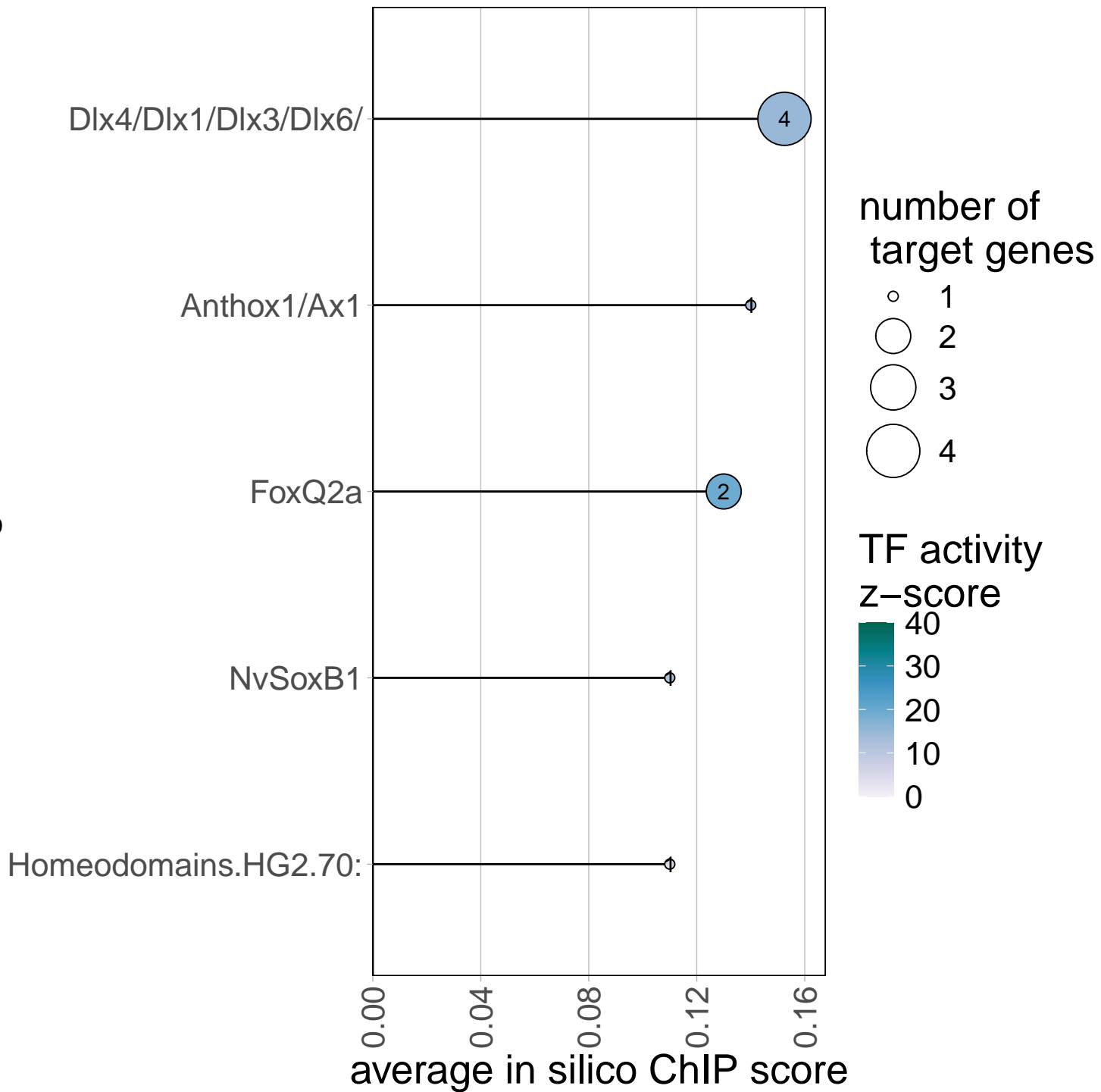


NPC_1_module_5



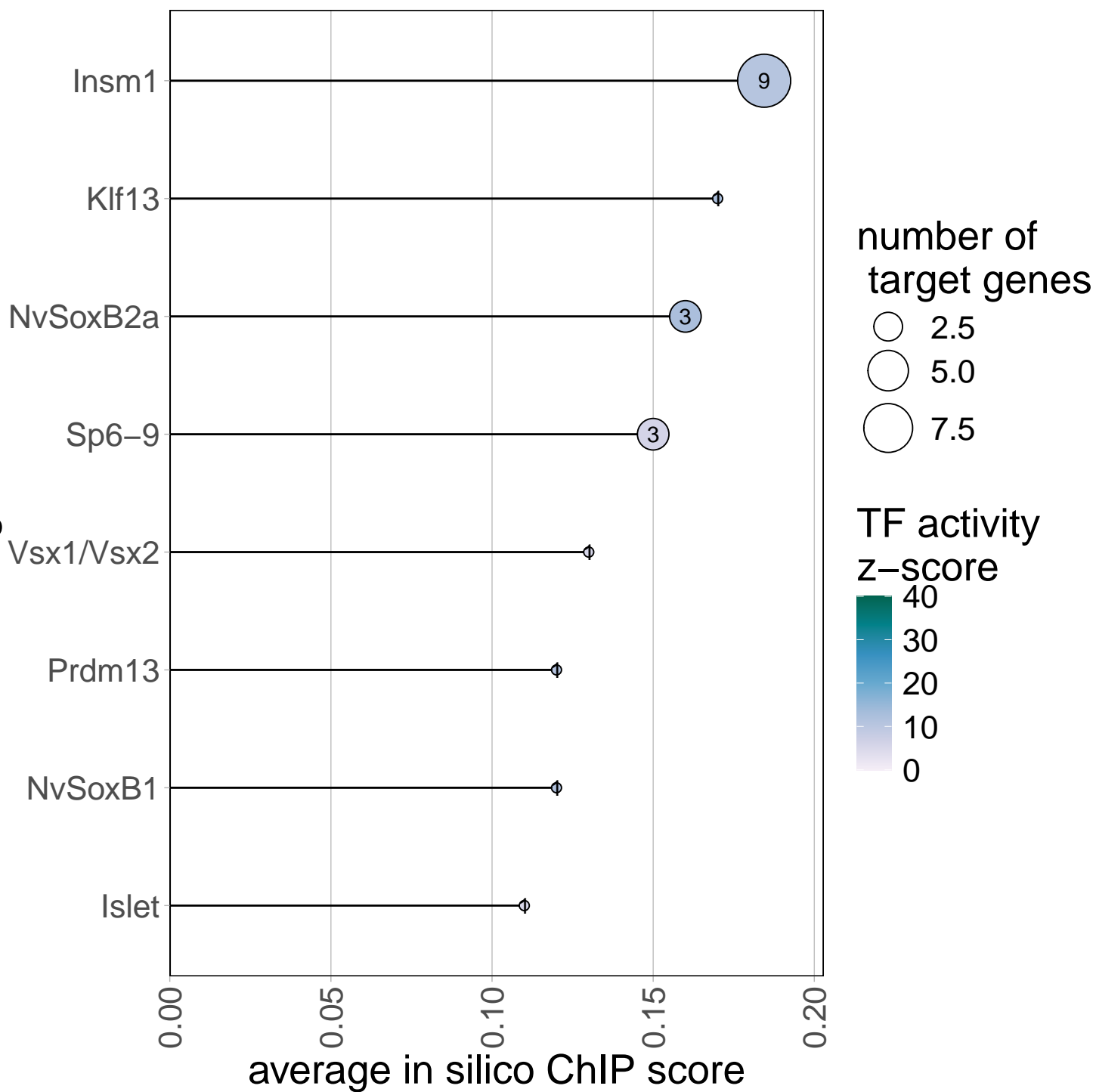
NPC_1_module_6

gene



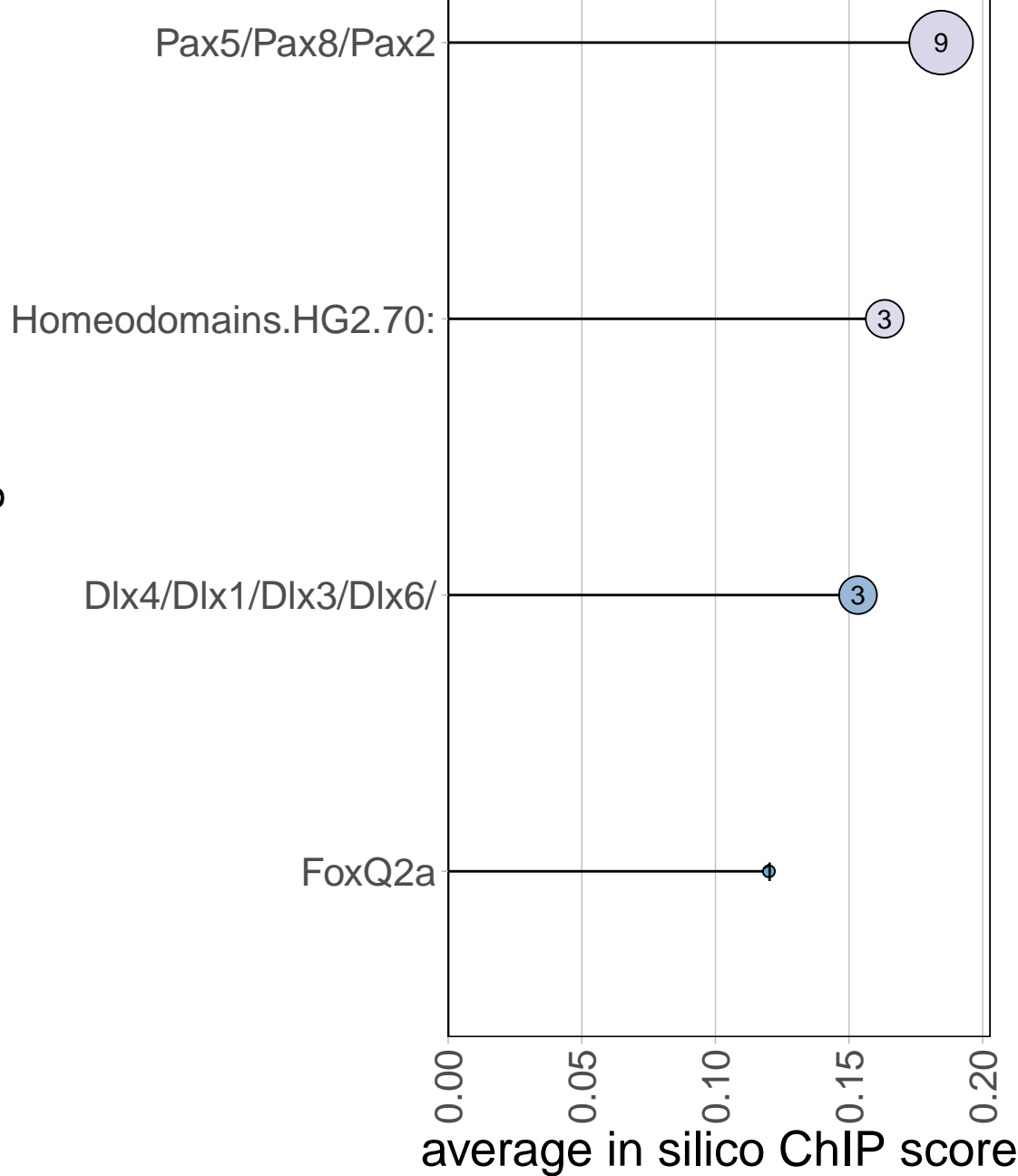
NPC_1_module_7

gene

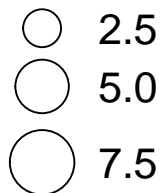


NPC_1_module_8

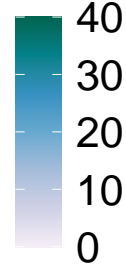
gene



number of
target genes

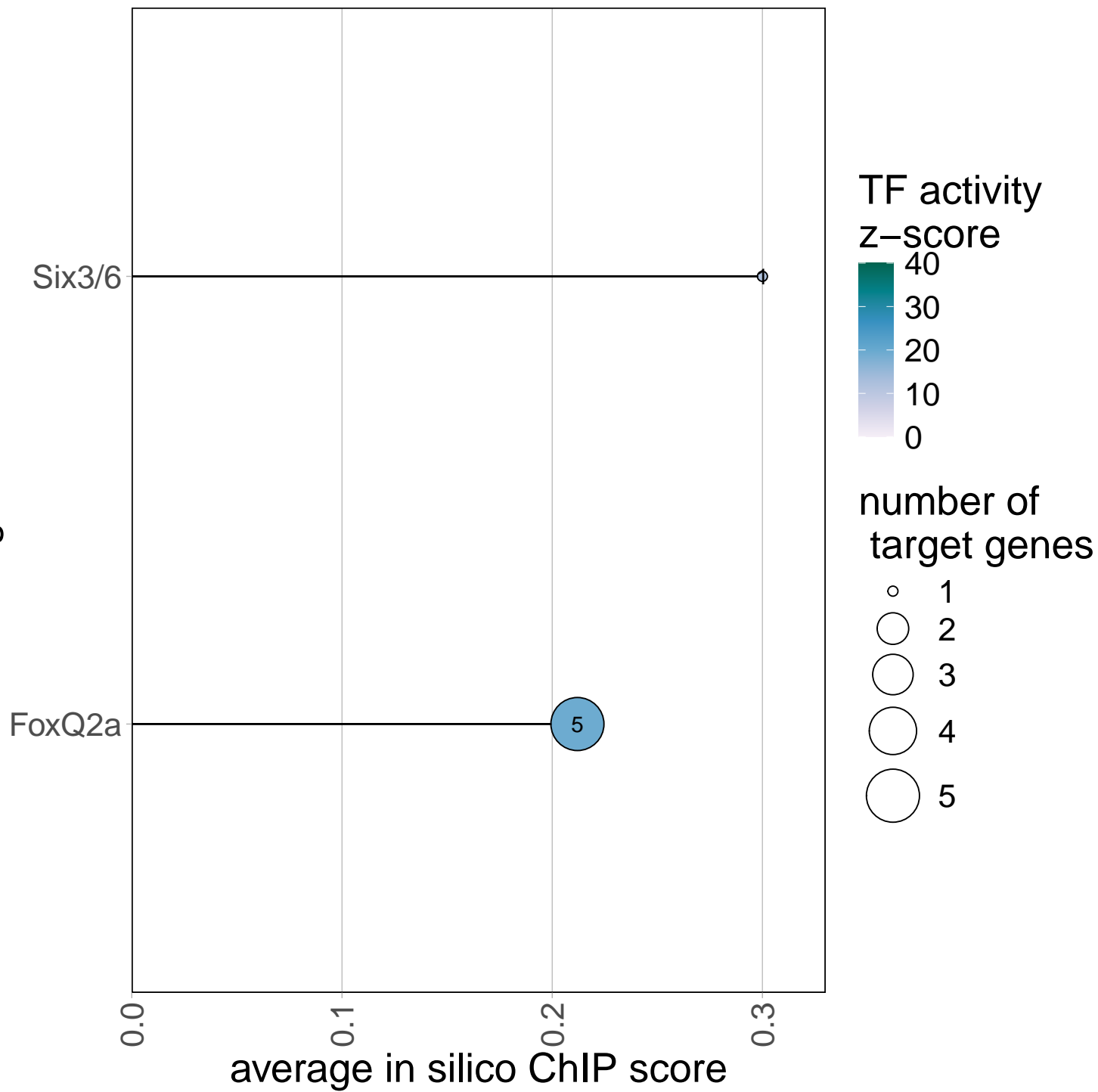


TF activity
z-score



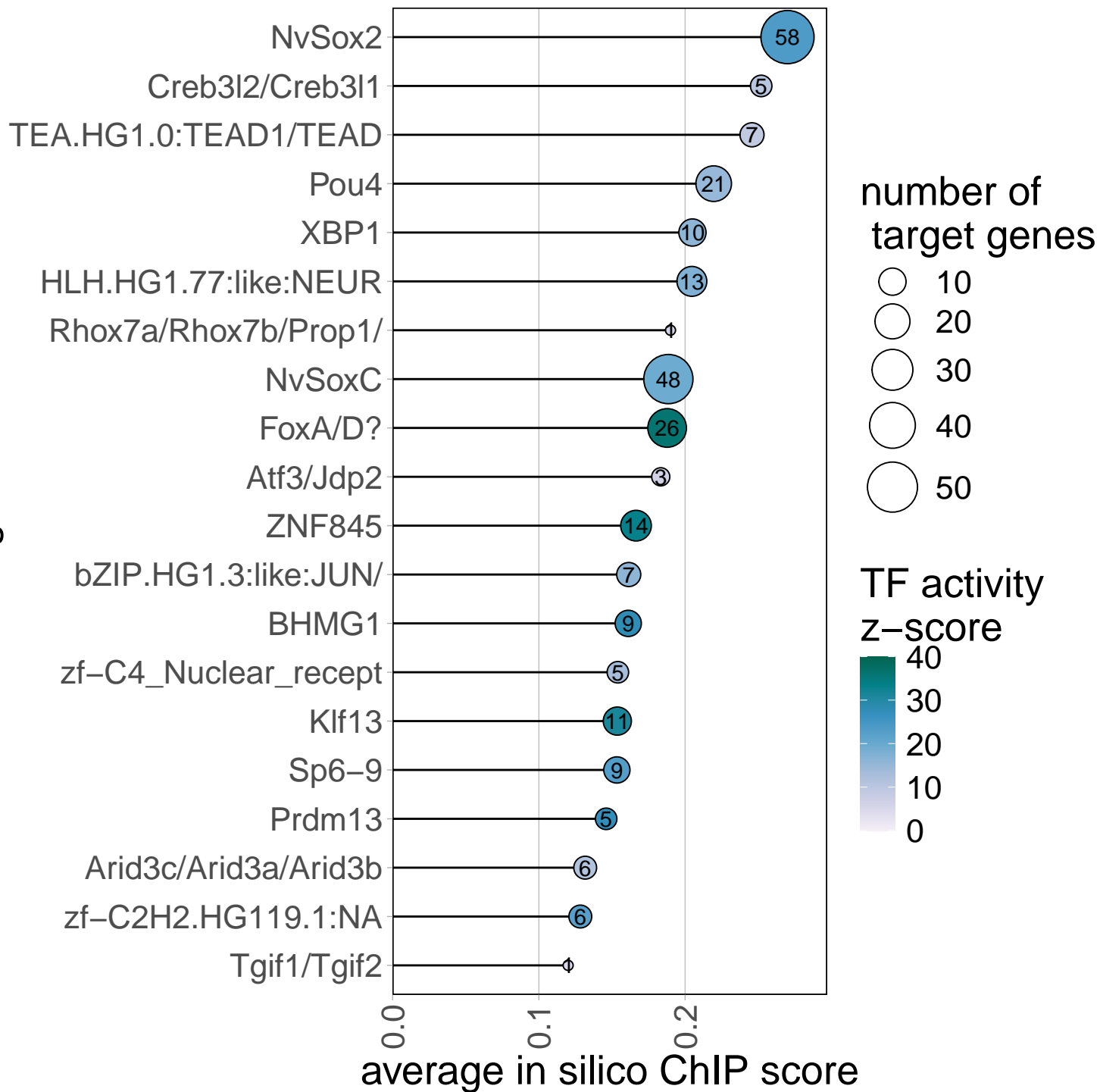
NPC_1_module_9

gene

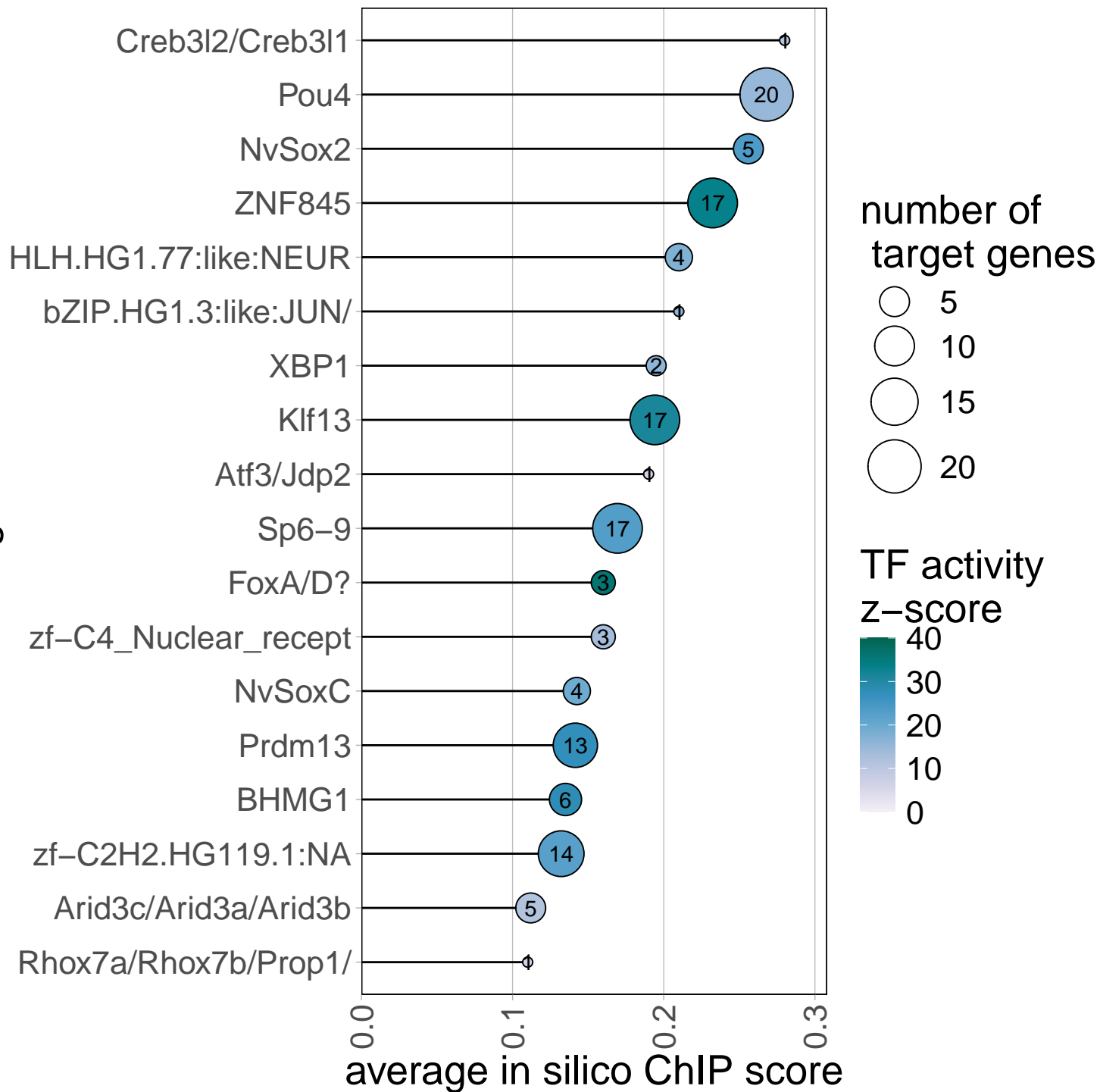


NPC_2_module_1

gene

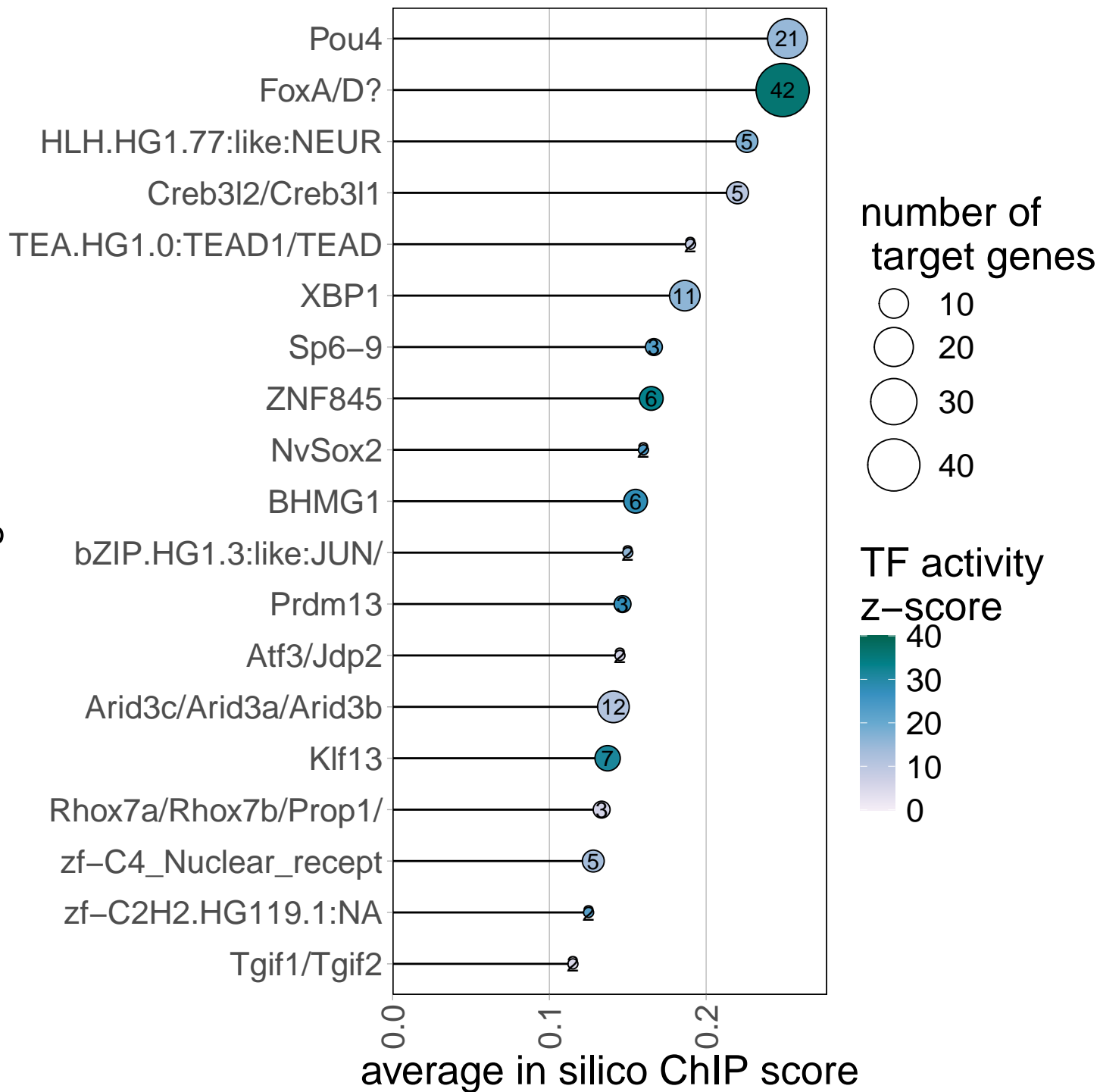


NPC_2_module_2



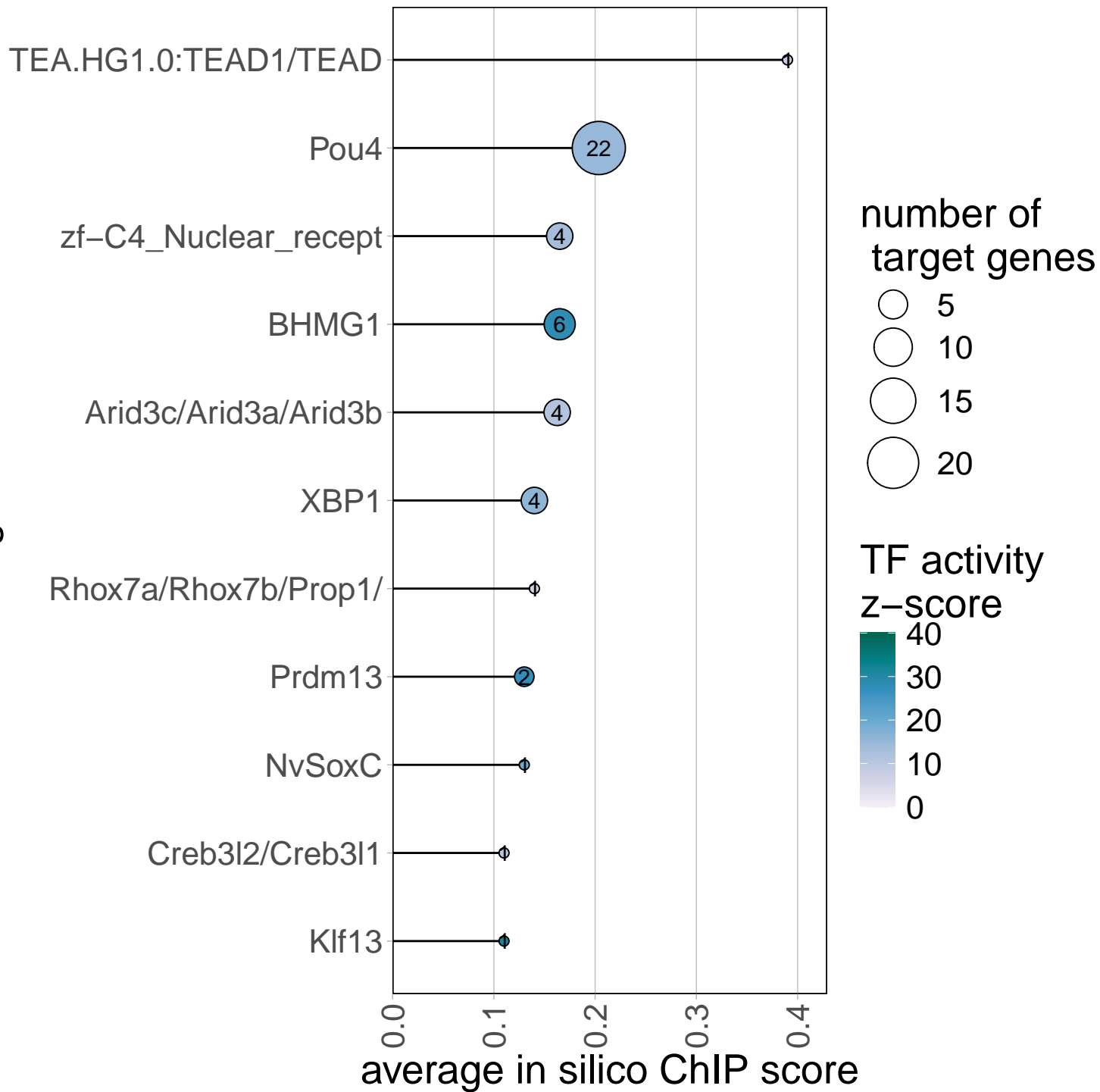
NPC_2_module_3

gene



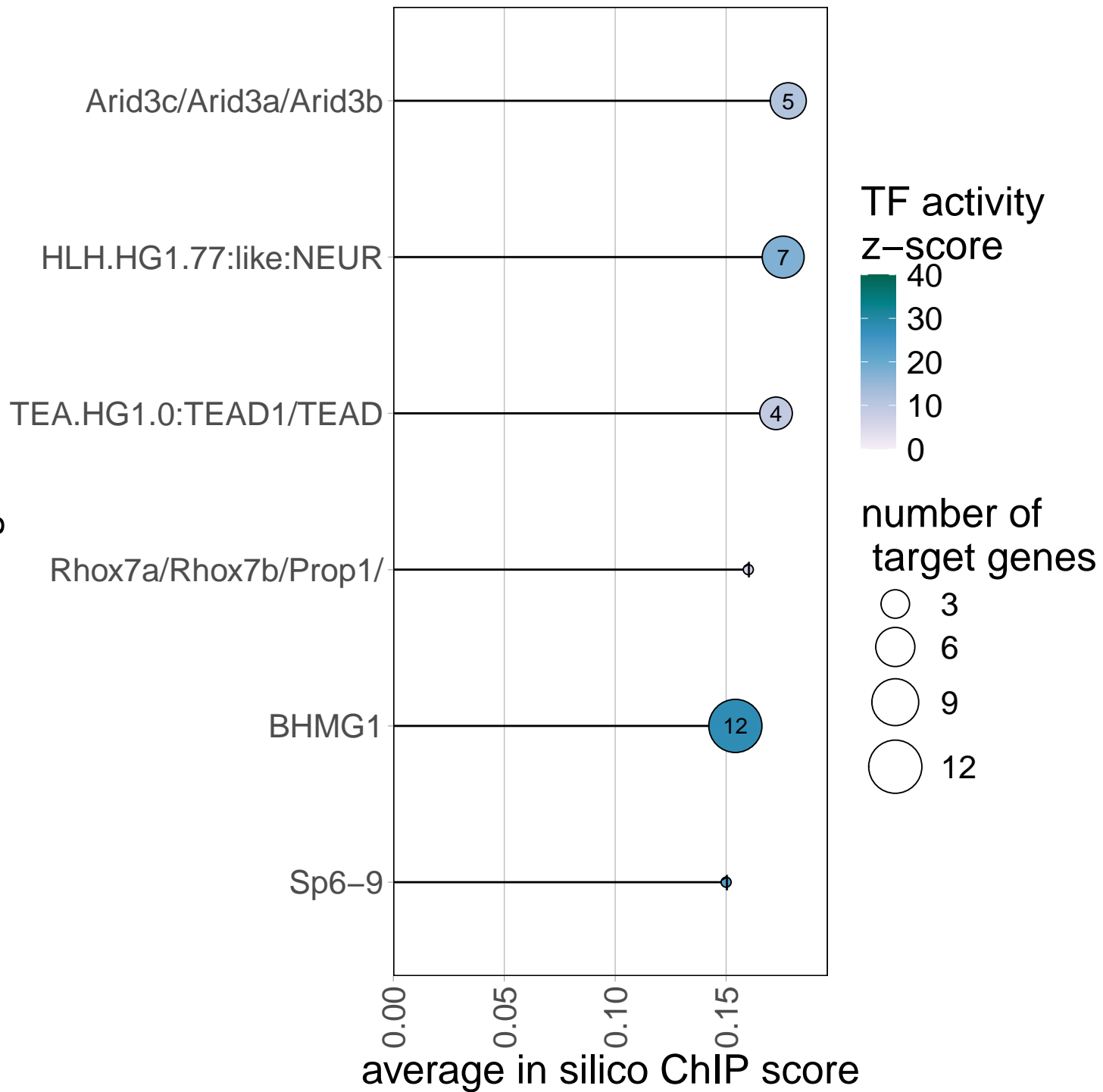
NPC_2_module_4

gene



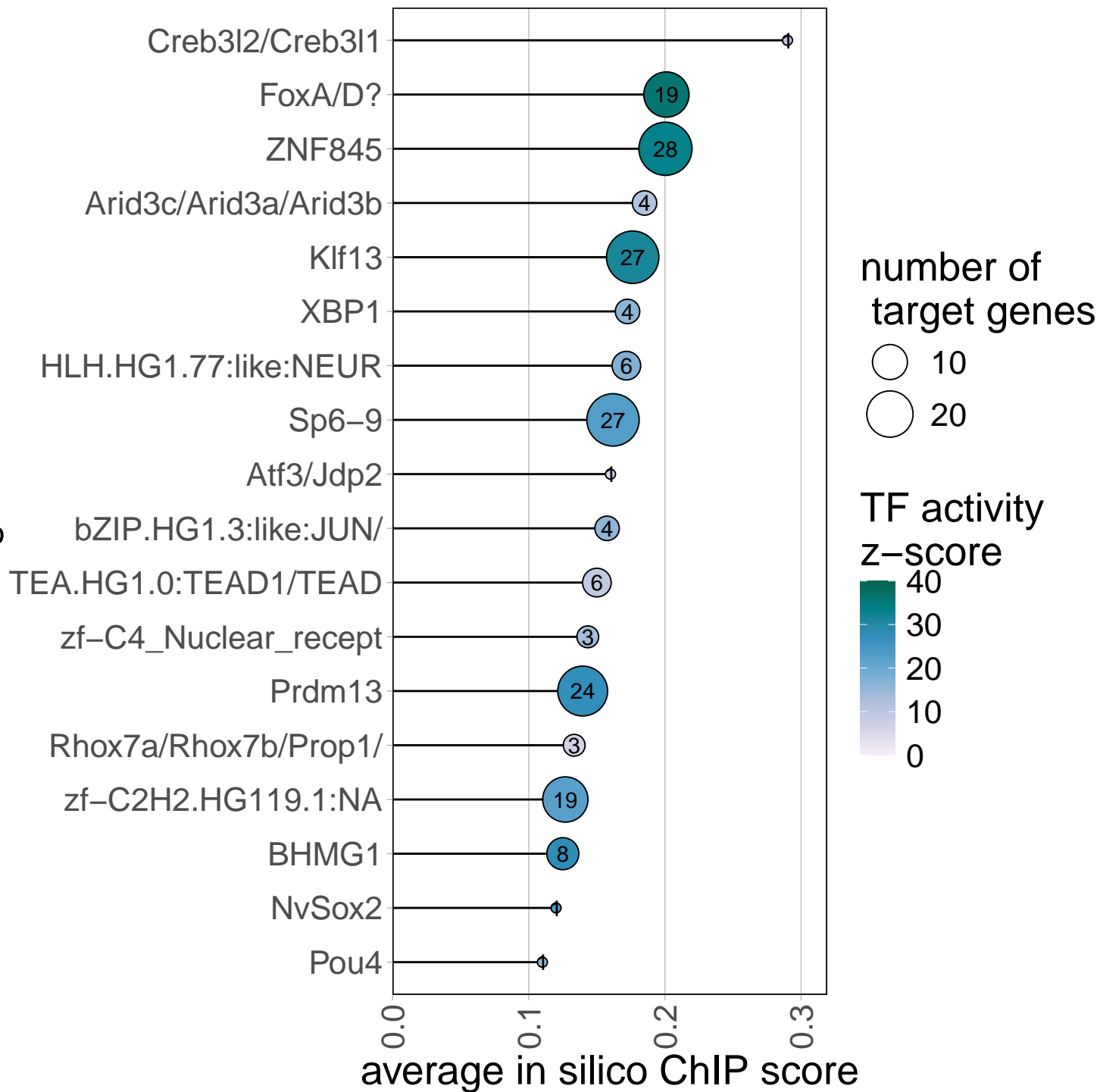
NPC_2_module_5

gene



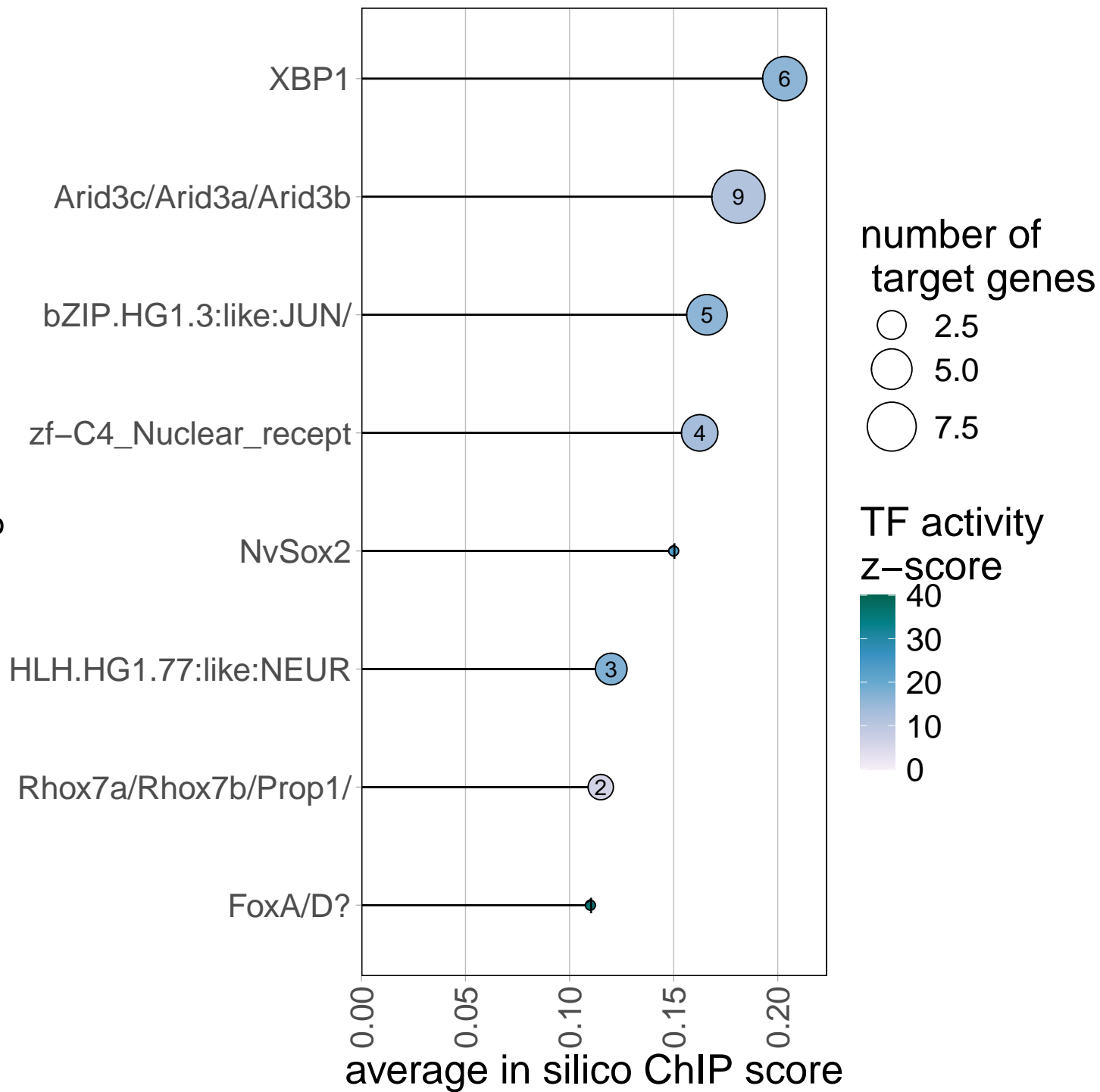
NPC_2_module_6

gene

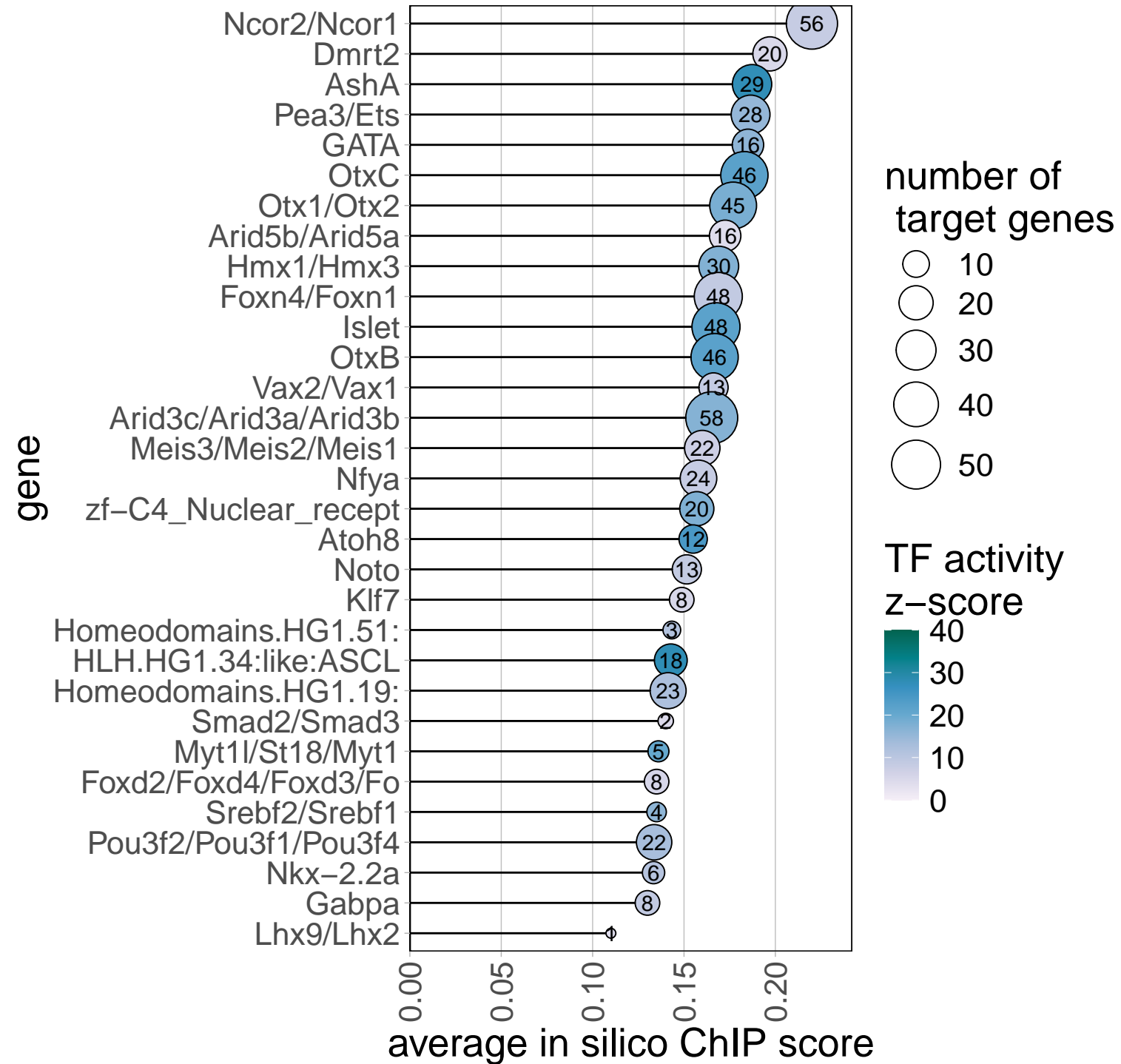


NPC_2_module_7

gene

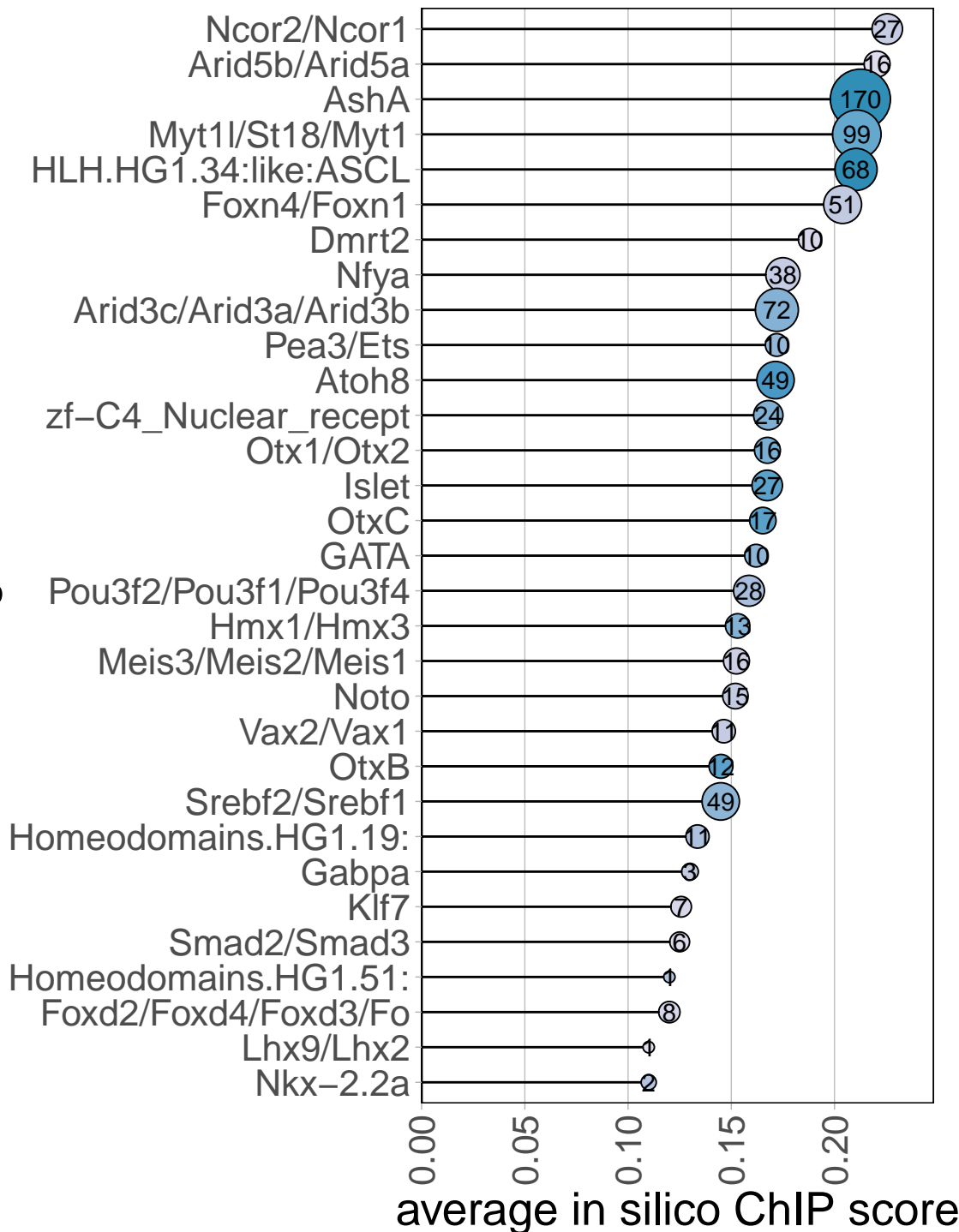


neuron_GATA_Islet_1_module_1

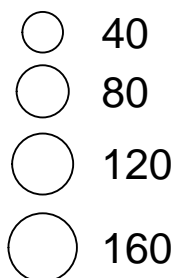


neuron_GATA_Islet_1_module_2

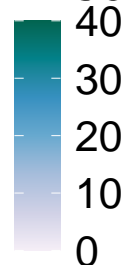
gene



number of target genes

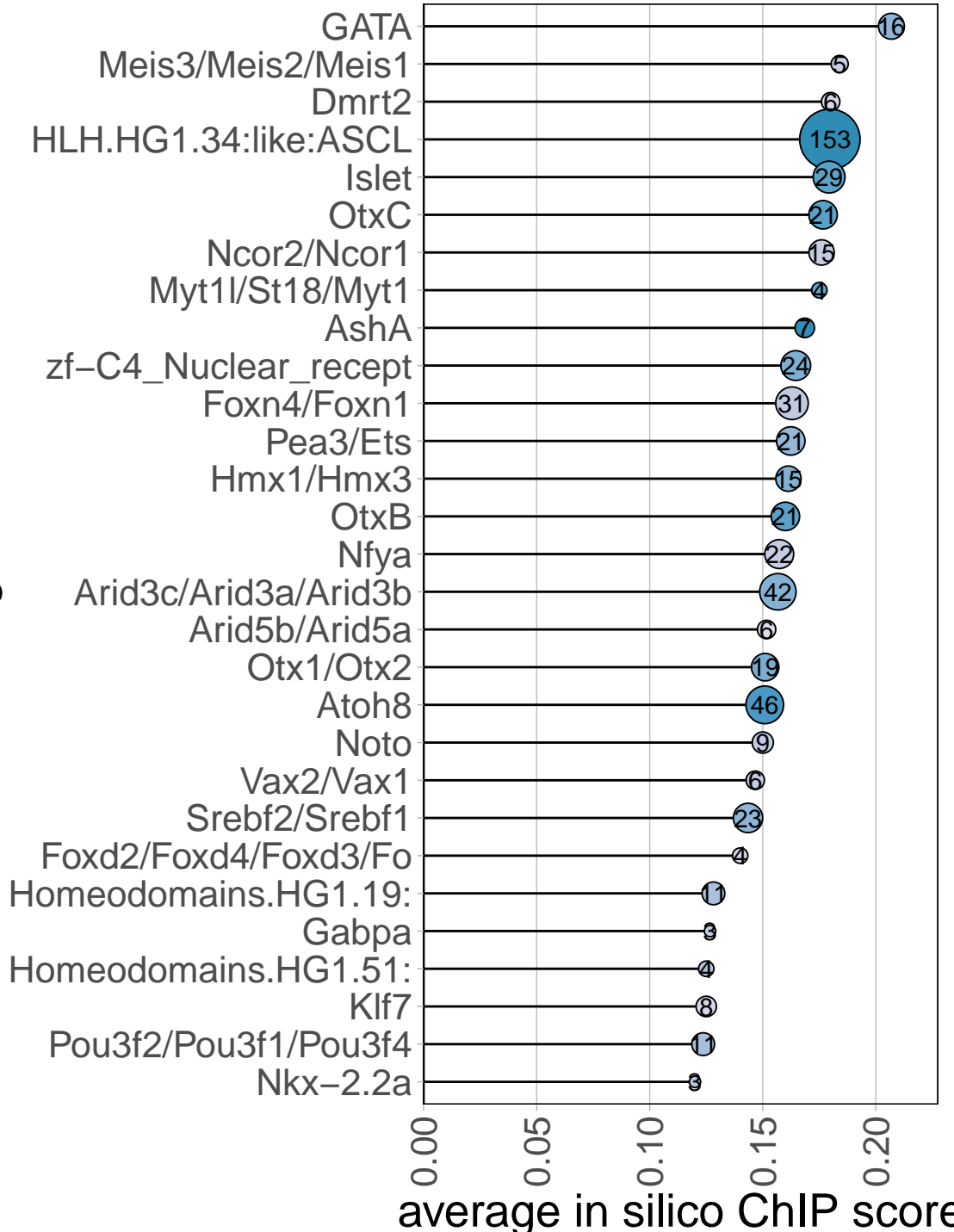


TF activity z-score

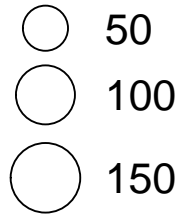


neuron_GATA_Islet_1_module_3

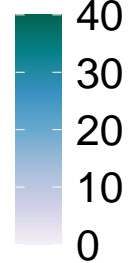
gene



number of target genes

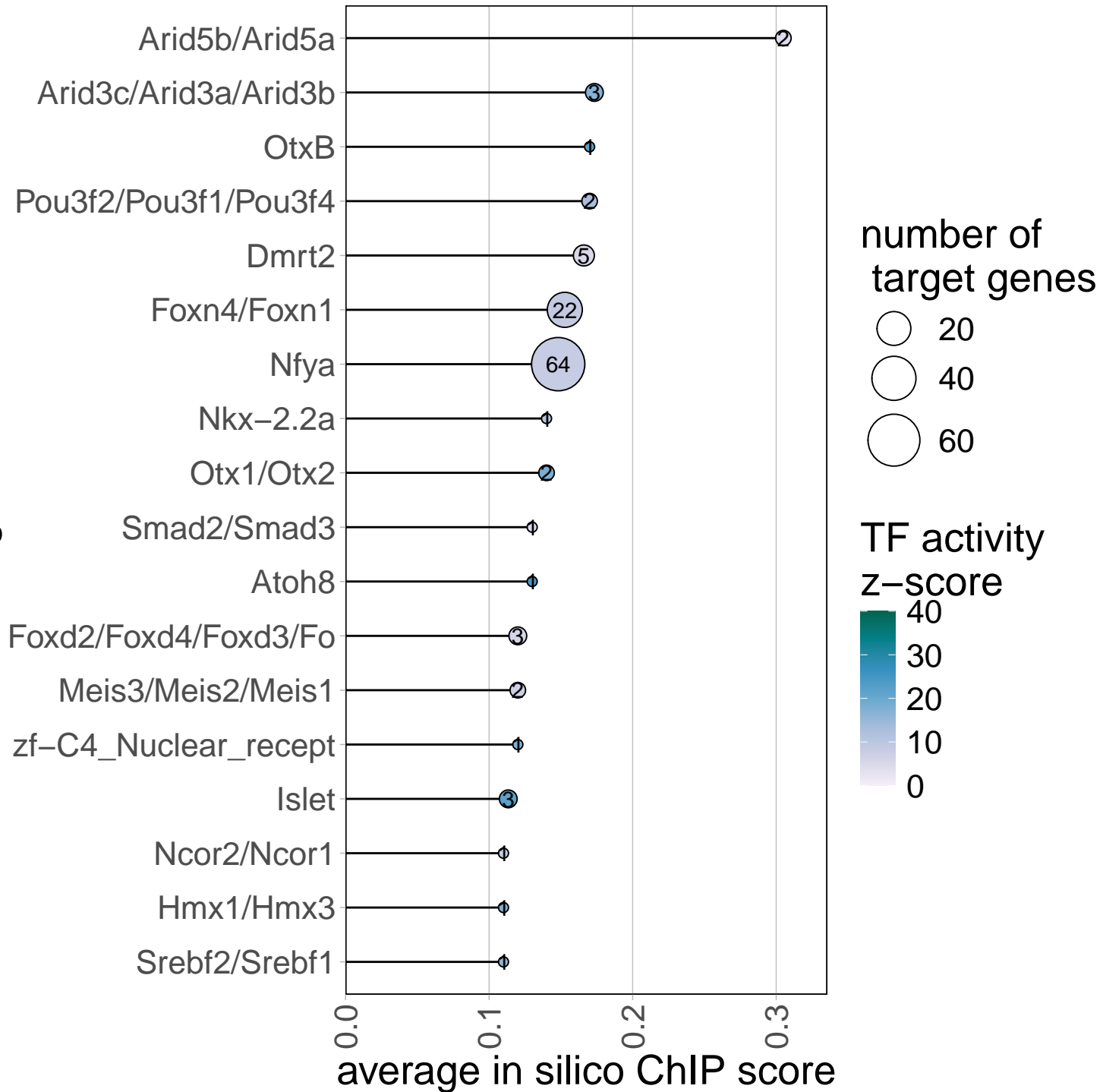


TF activity z-score

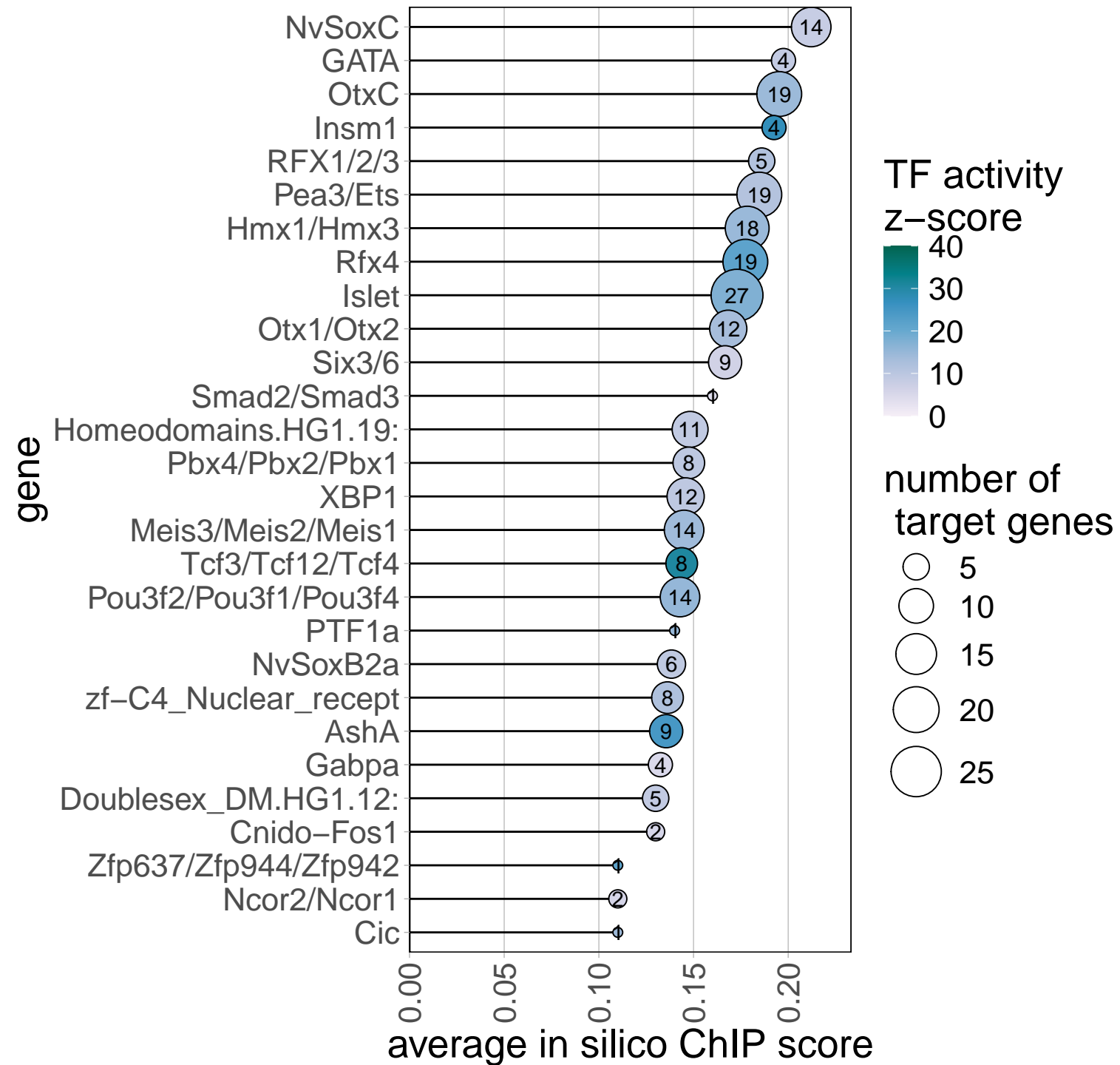


neuron_GATA_Islet_1_module_4

gene

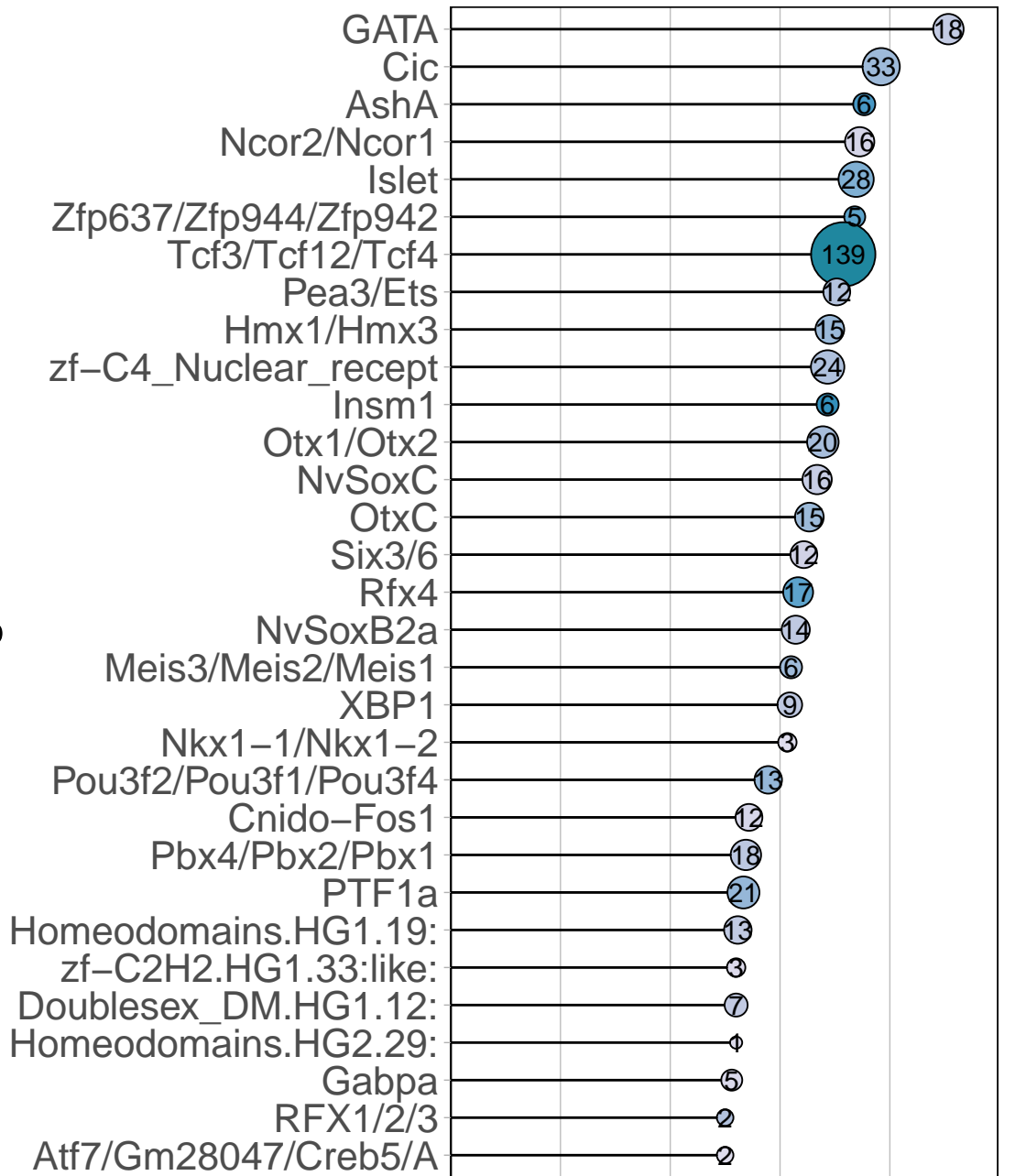


neuron_GATA_Islet_2_module_1



neuron_GATA_Islet_2_module_2

gene



number of target genes

○ 50

○ 100

TF activity

z-score

40

30

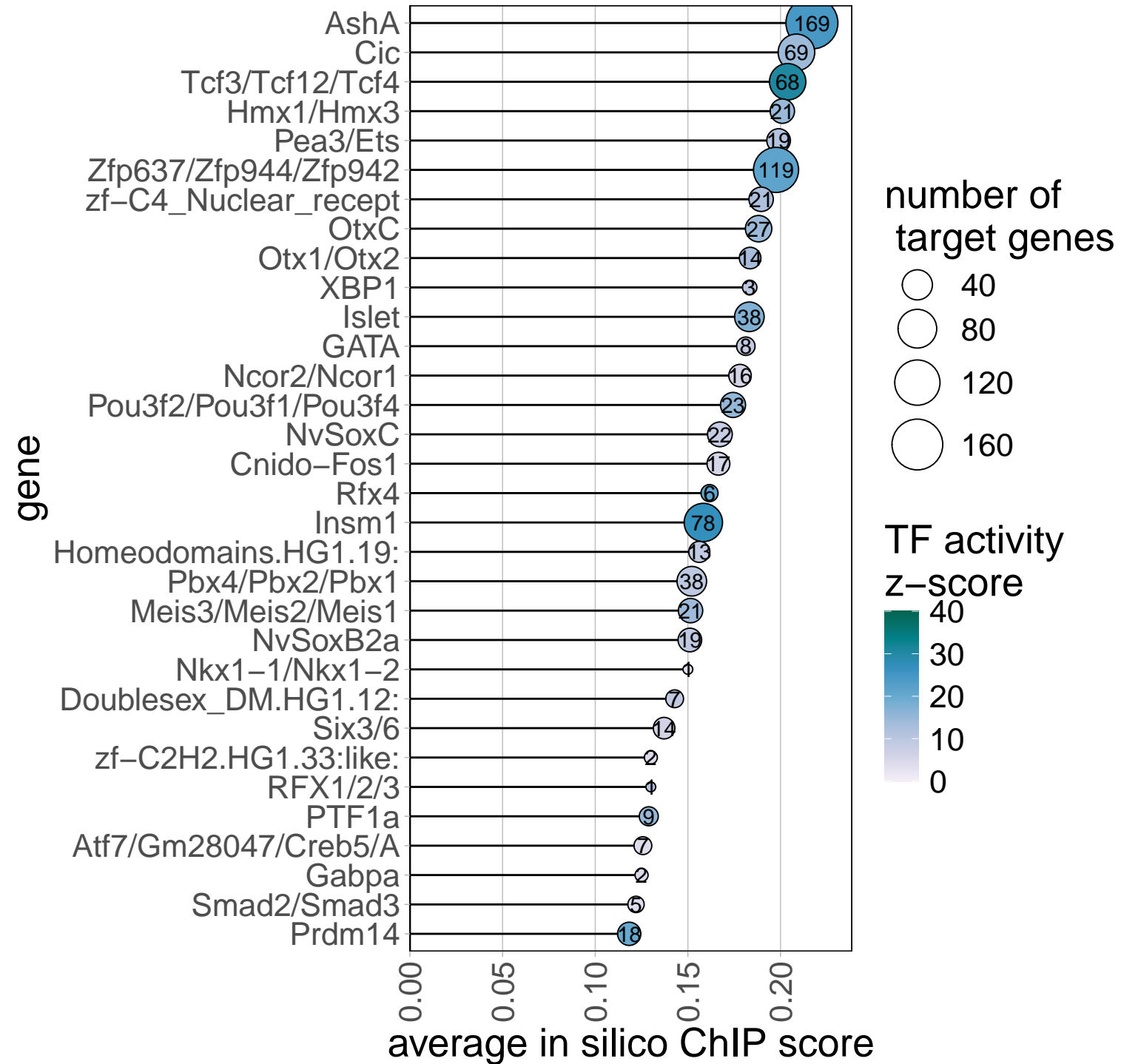
20

10

0

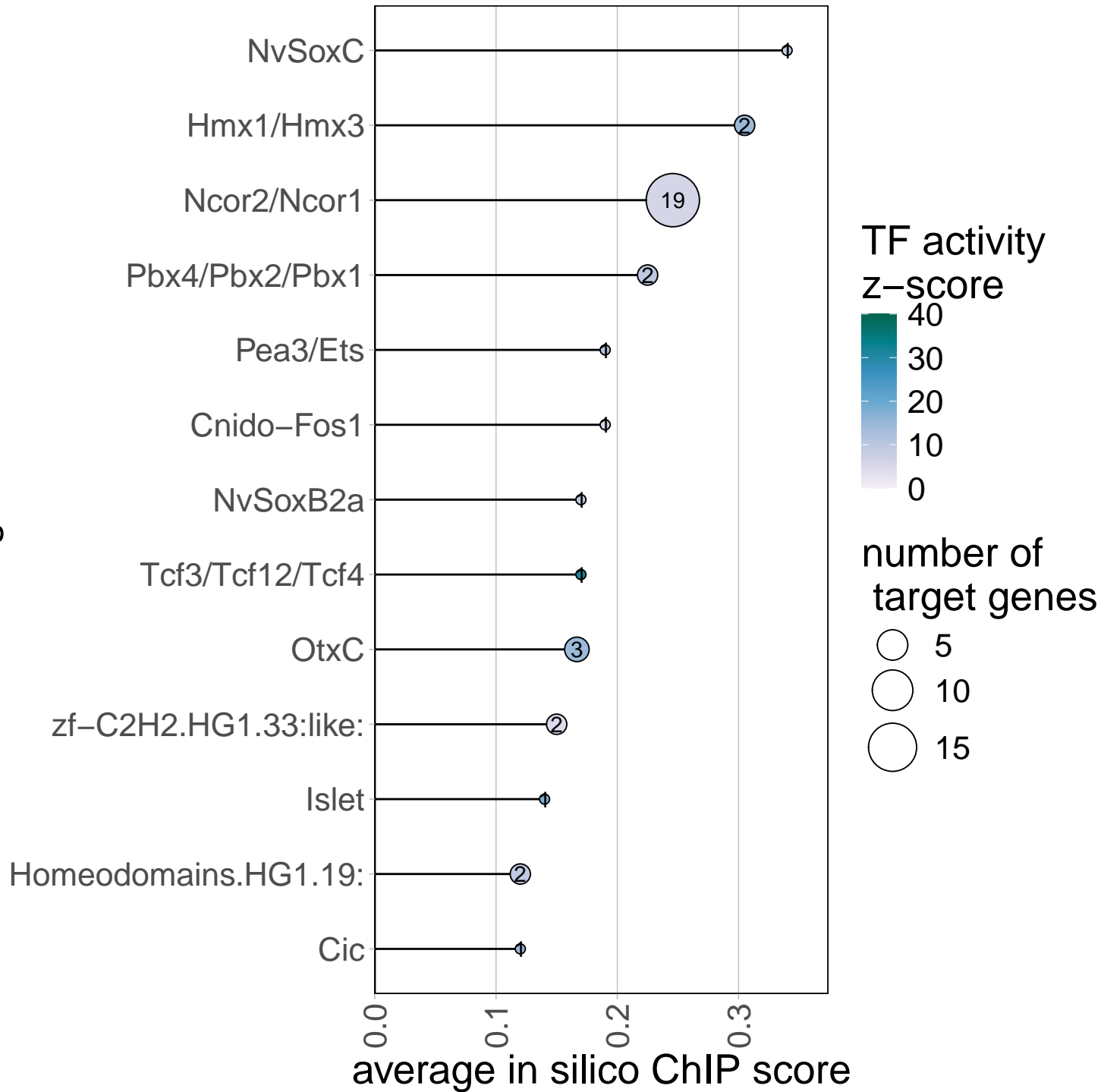
average in silico ChIP score

neuron_GATA_Islet_2_module_3



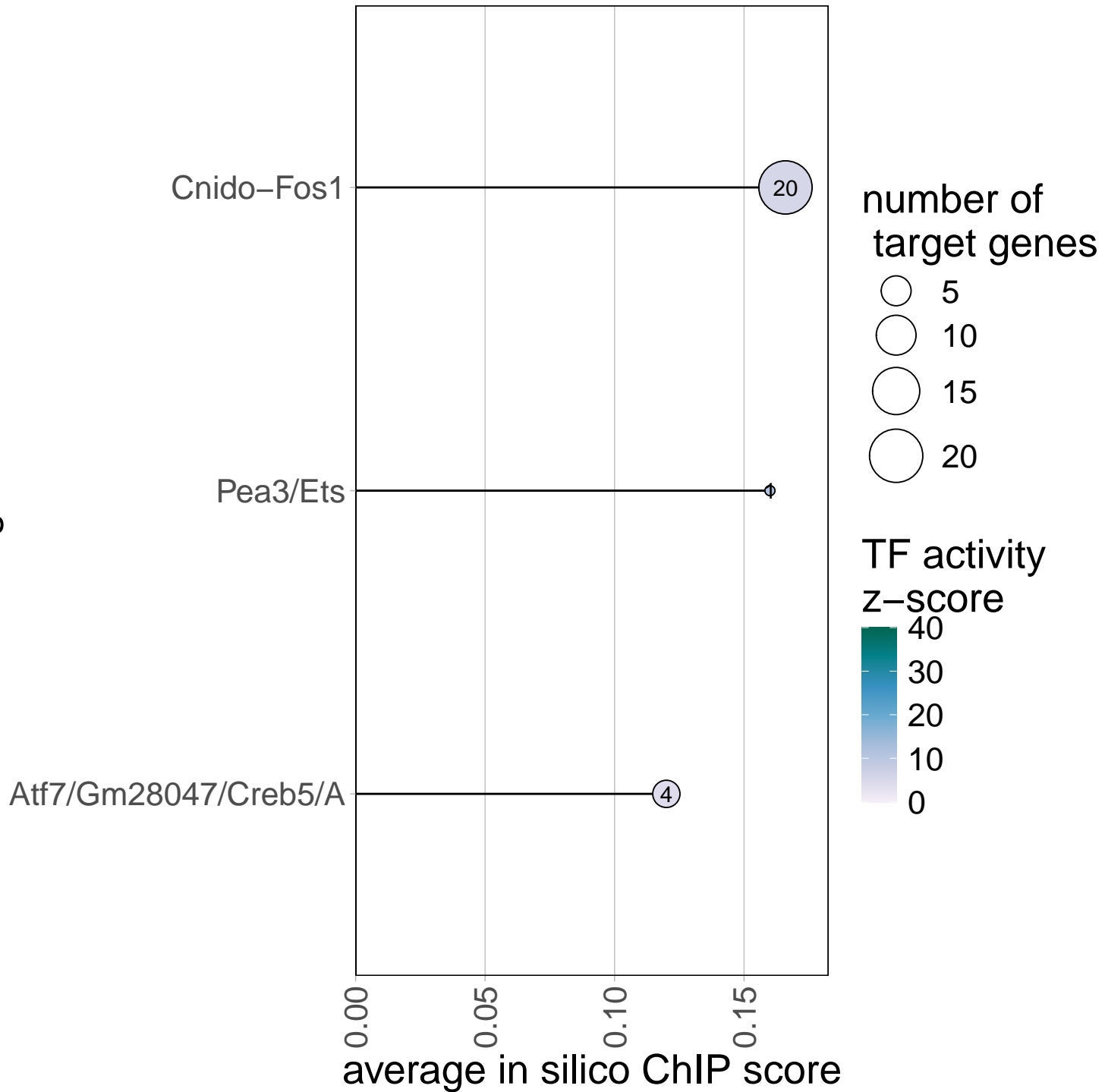
neuron_GATA_Islet_2_module_4

gene

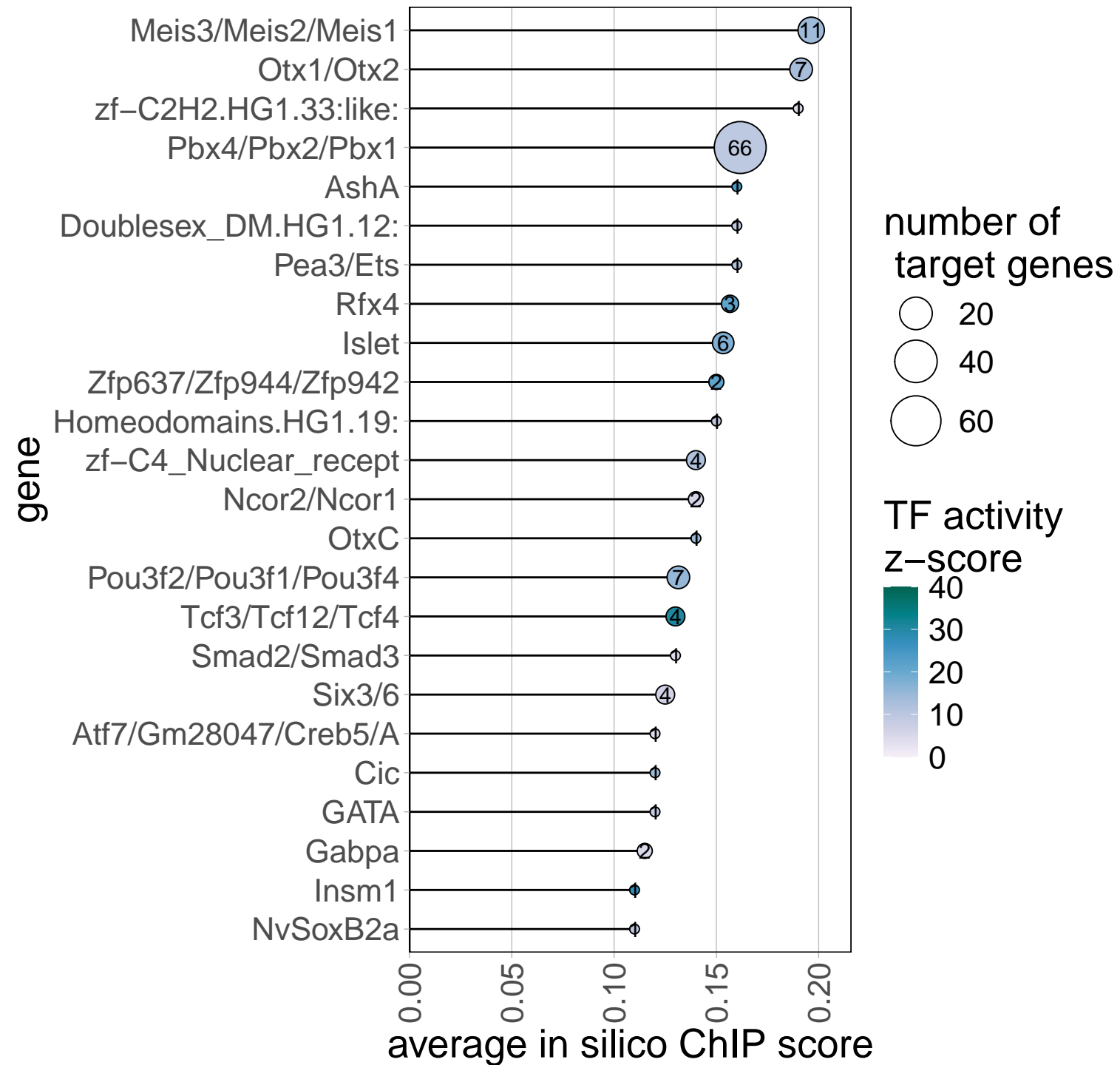


neuron_GATA_Islet_2_module_5

gene

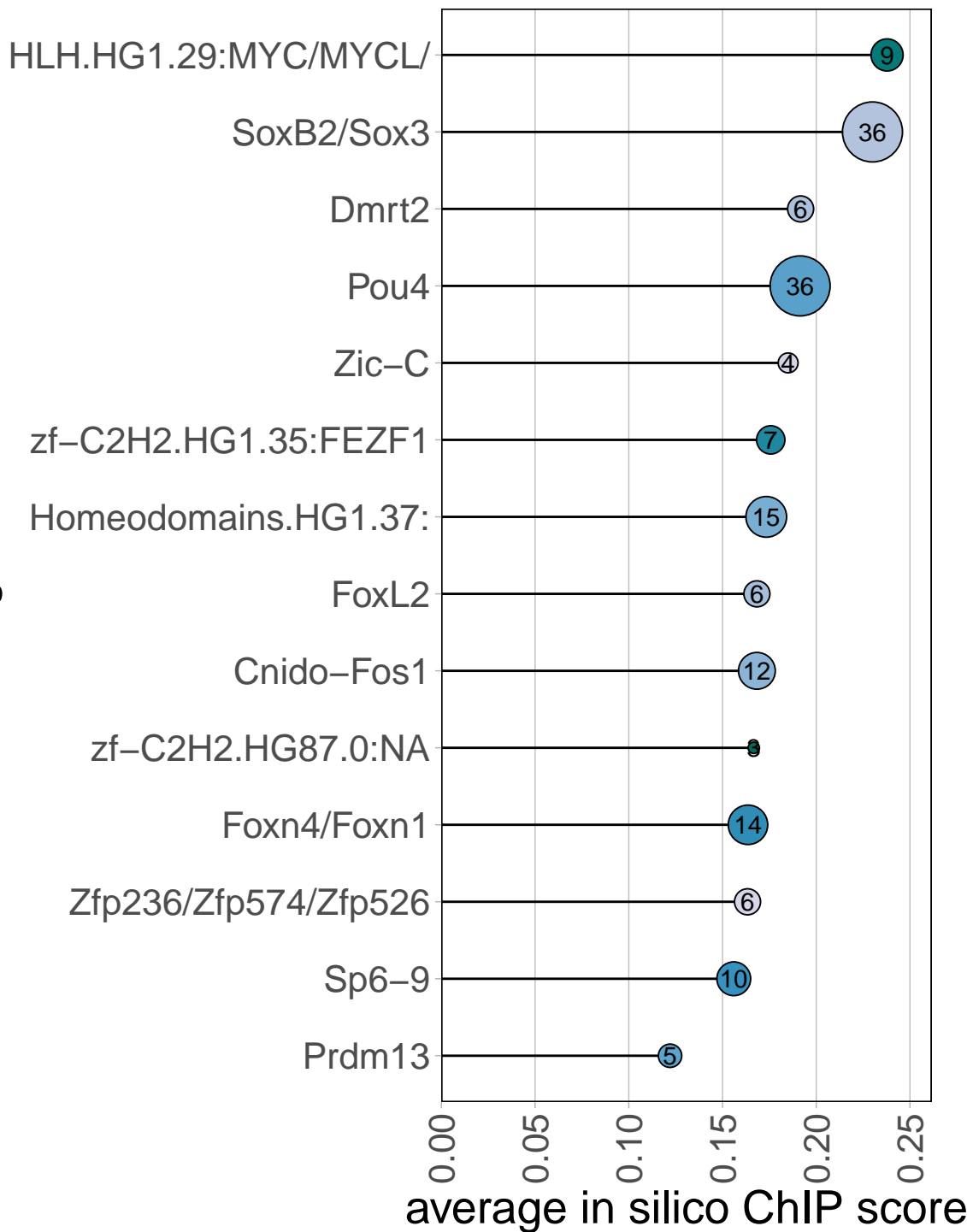


neuron_GATA_Islet_2_module_6

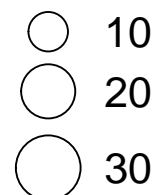


neuron_Pou4_FoxL2_1_module_1

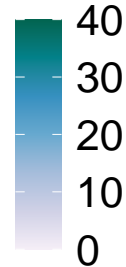
gene



number of target genes

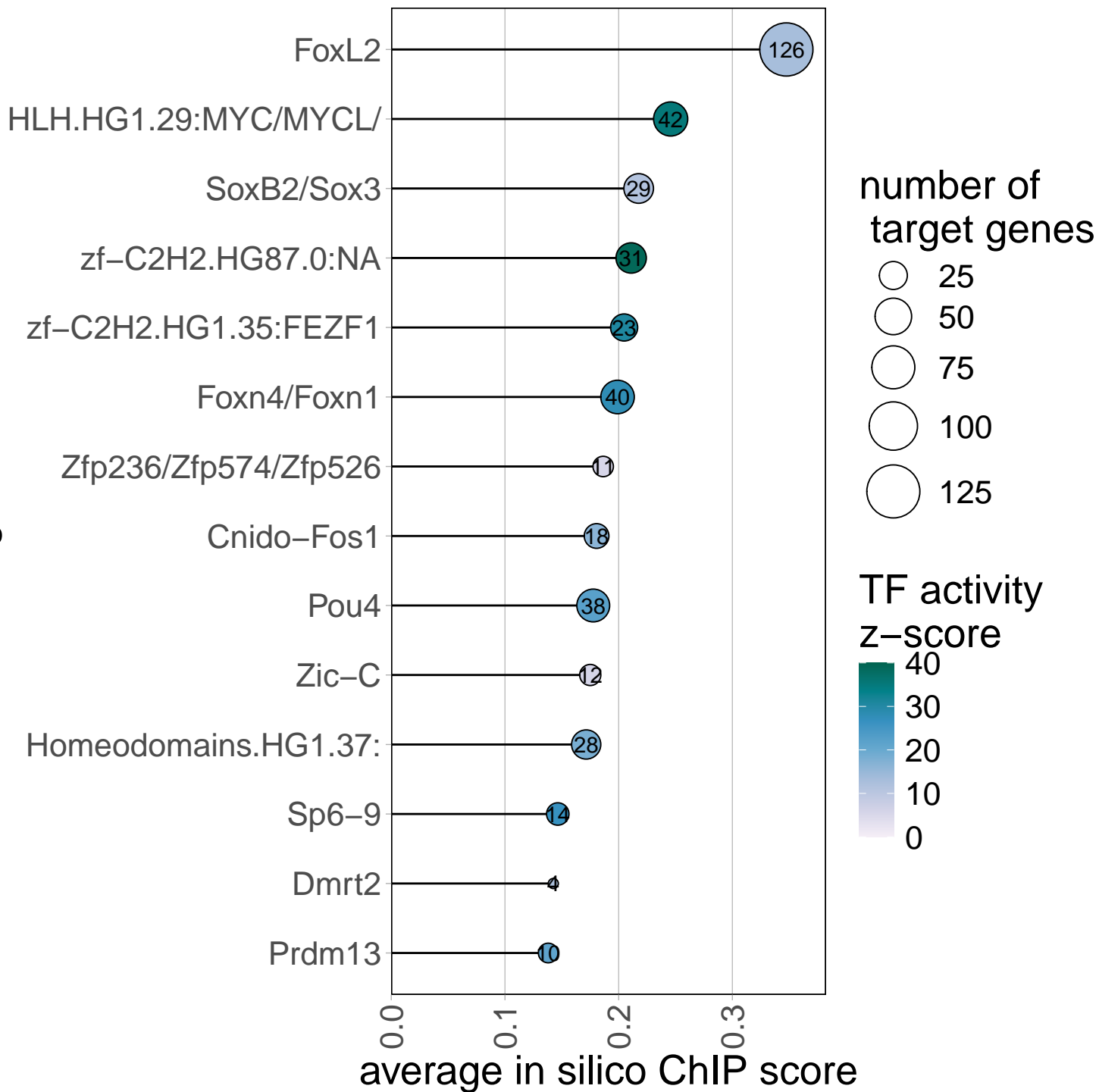


TF activity z-score



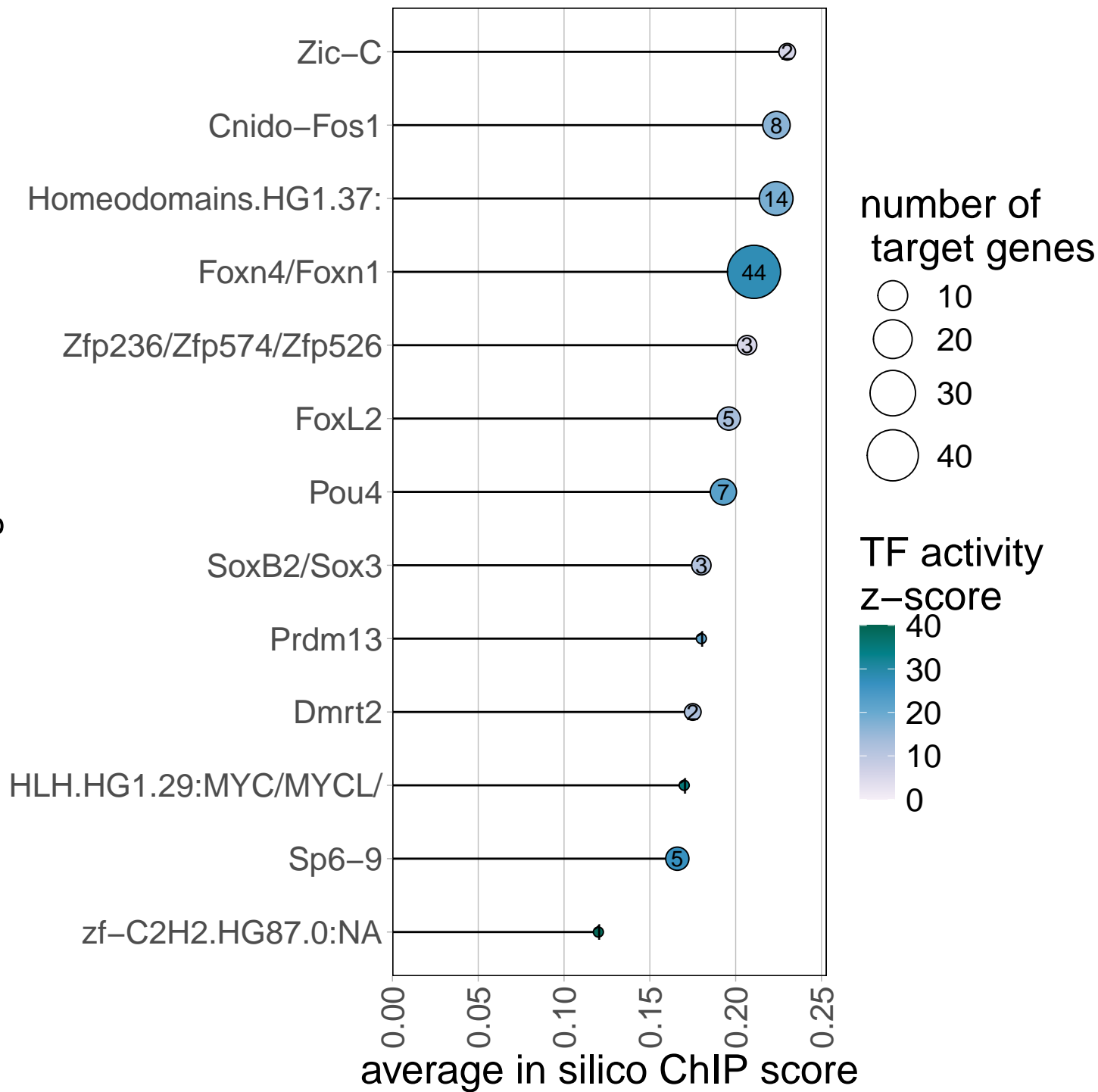
neuron_Pou4_FoxL2_1_module_2

gene



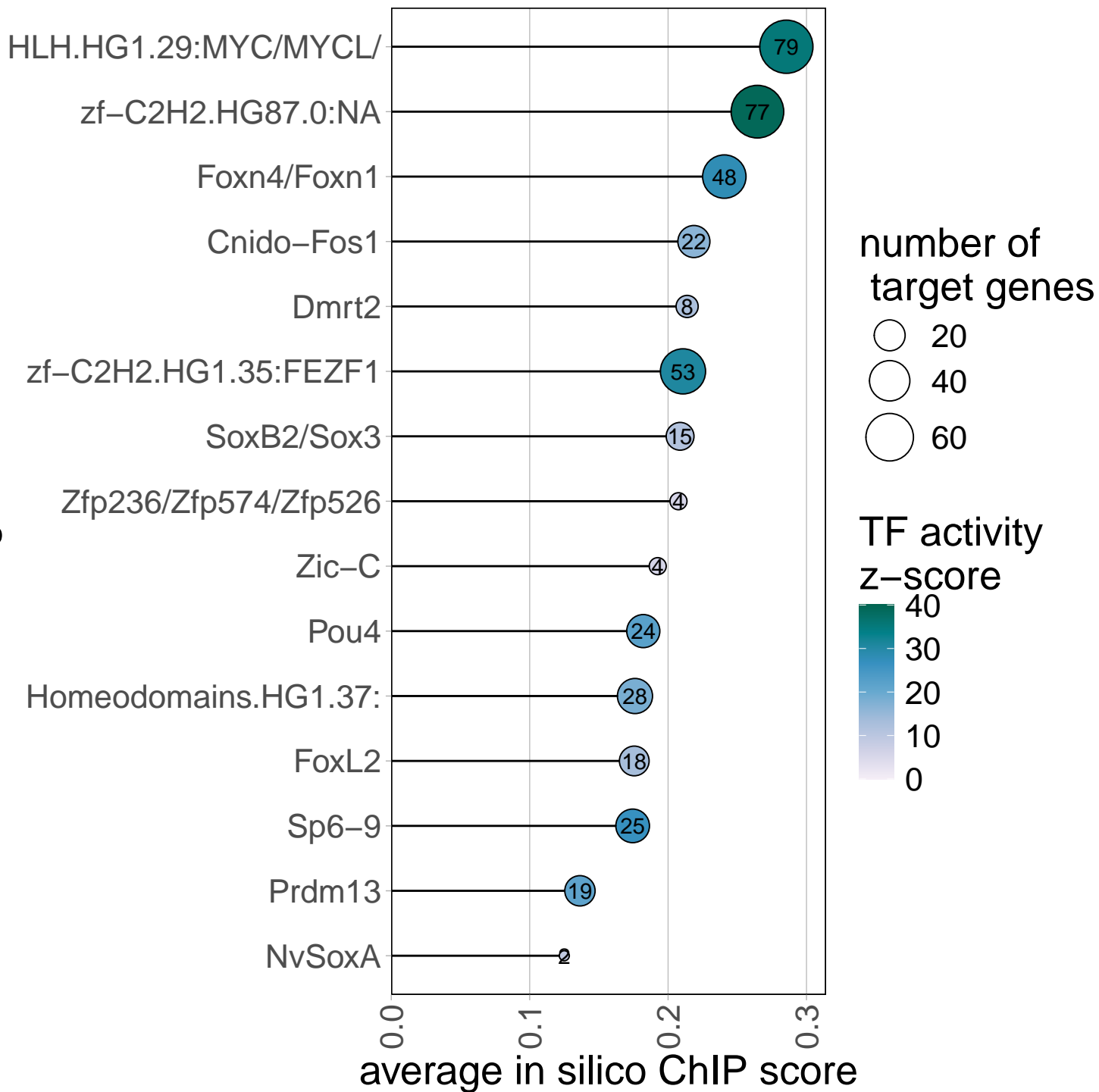
neuron_Pou4_FoxL2_1_module_3

gene



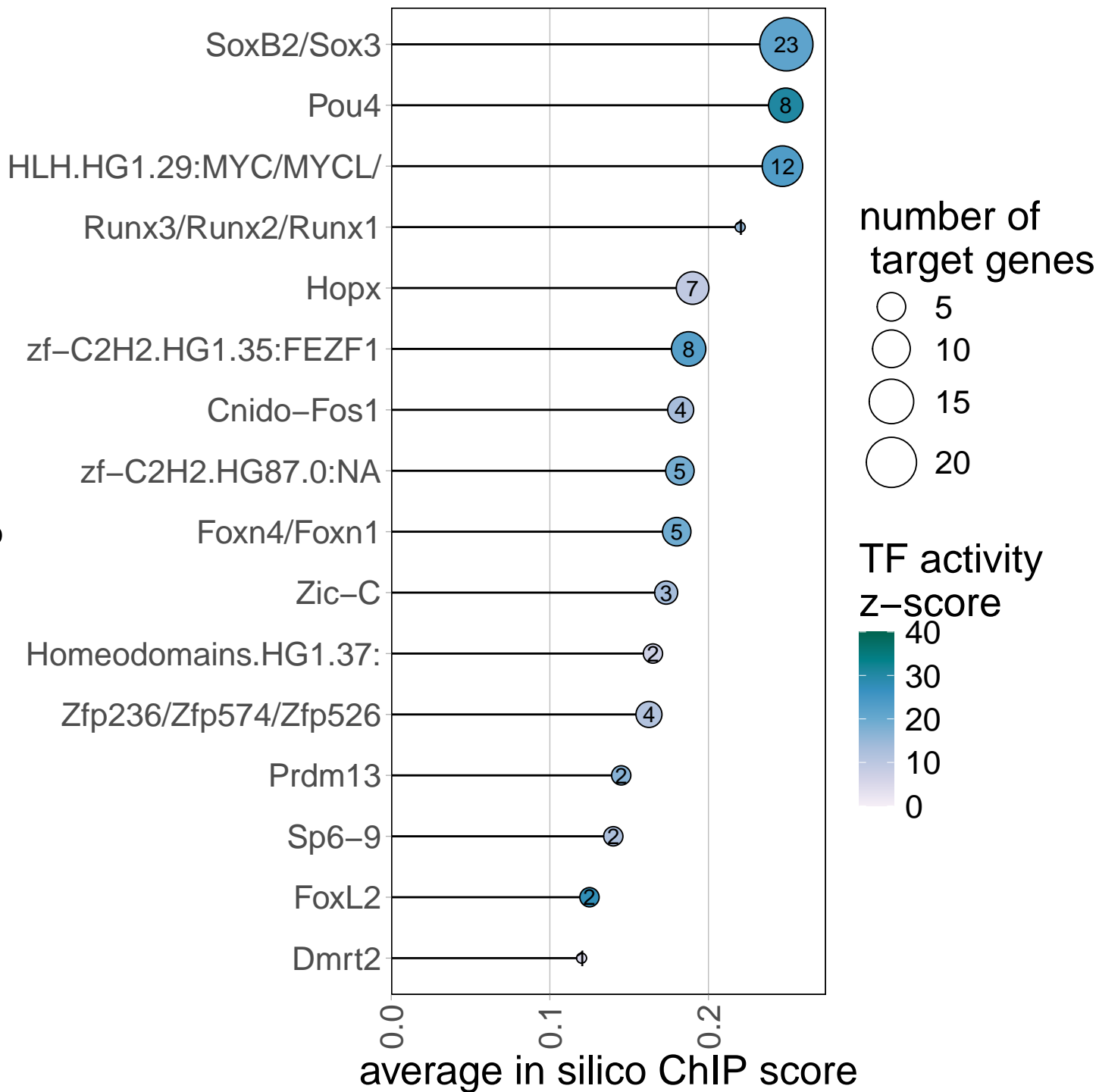
neuron_Pou4_FoxL2_1_module_4

gene



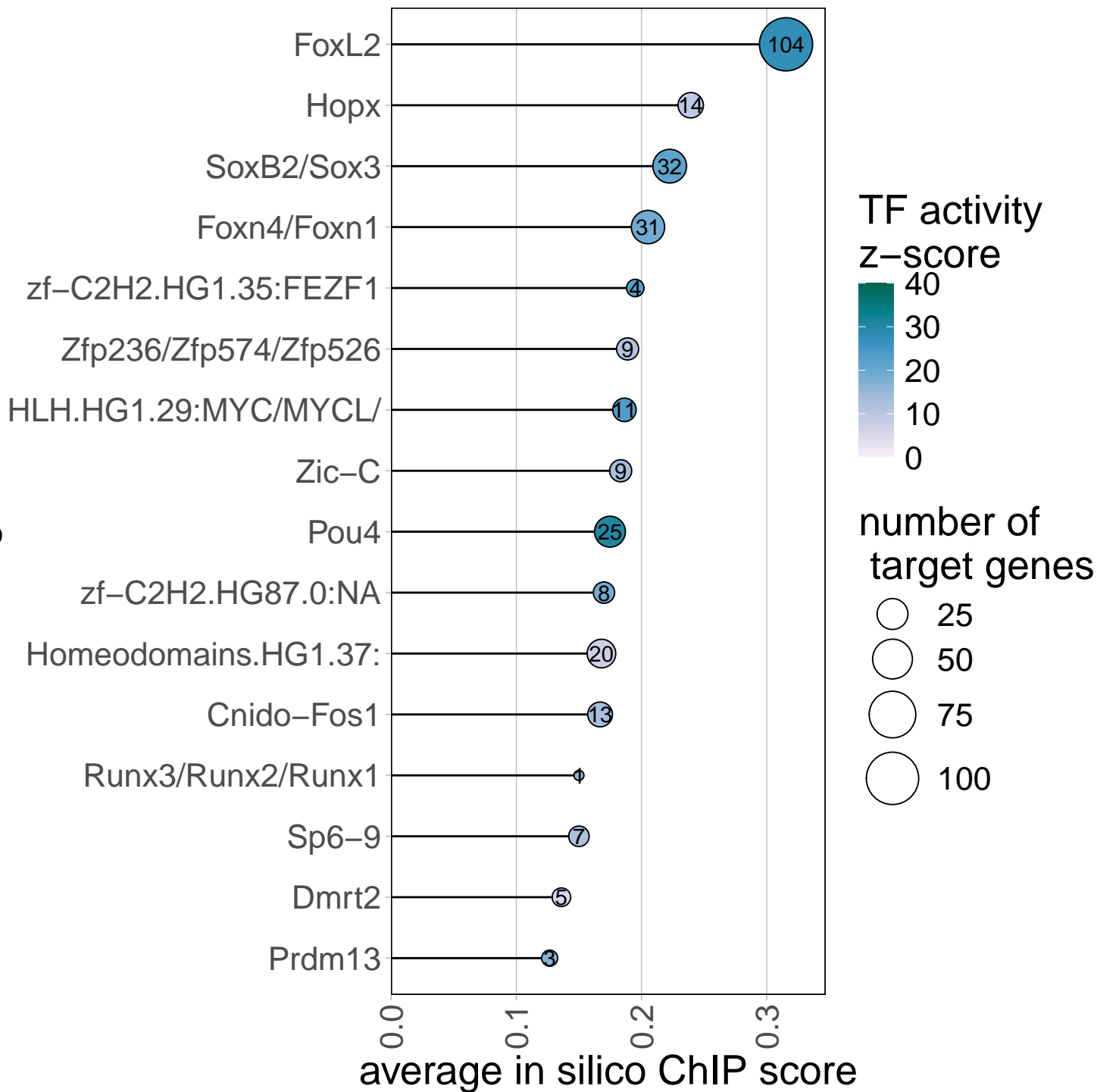
neuron_Pou4_FoxL2_2_module_1

gene



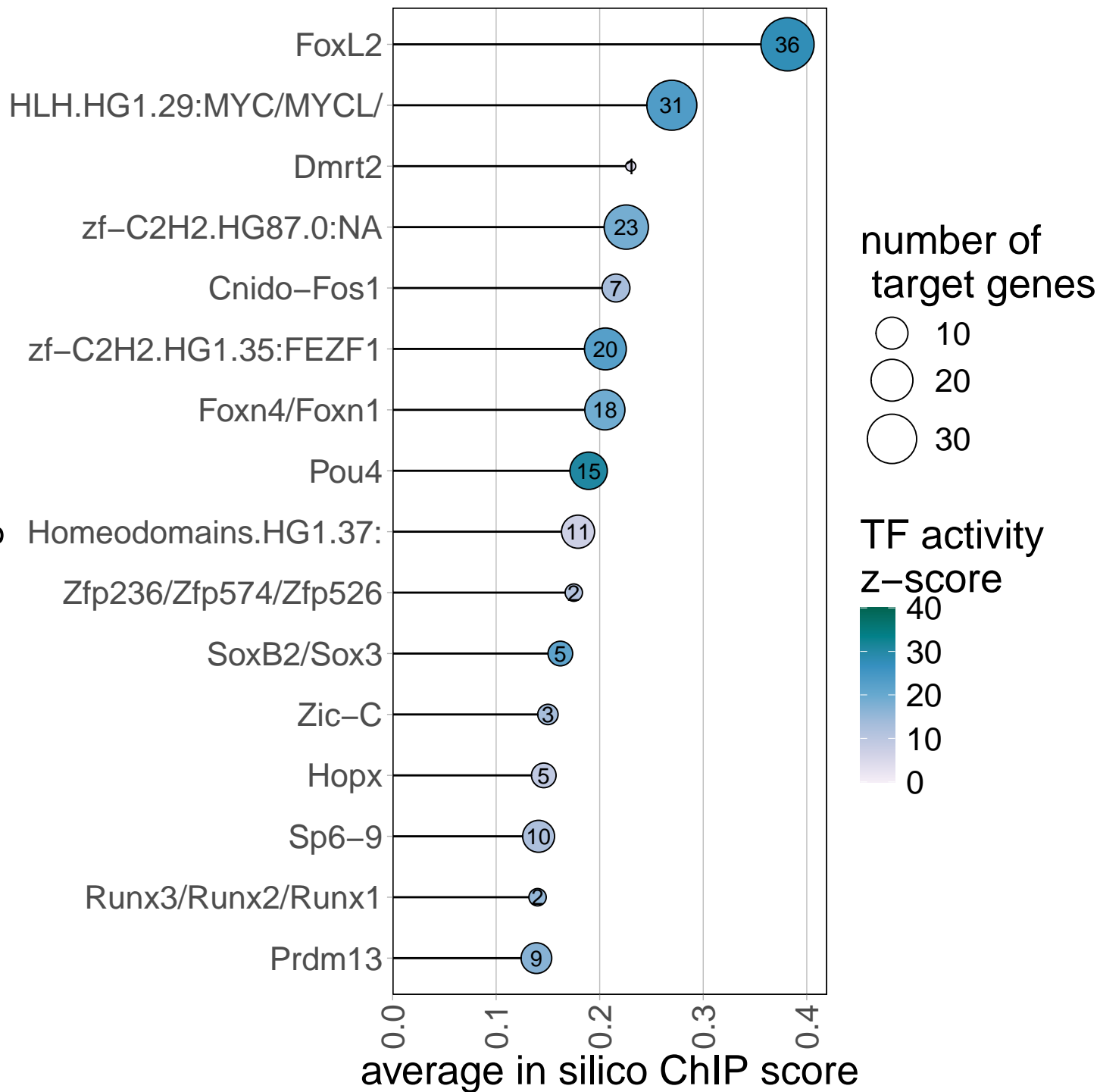
neuron_Pou4_FoxL2_2_module_2

gene



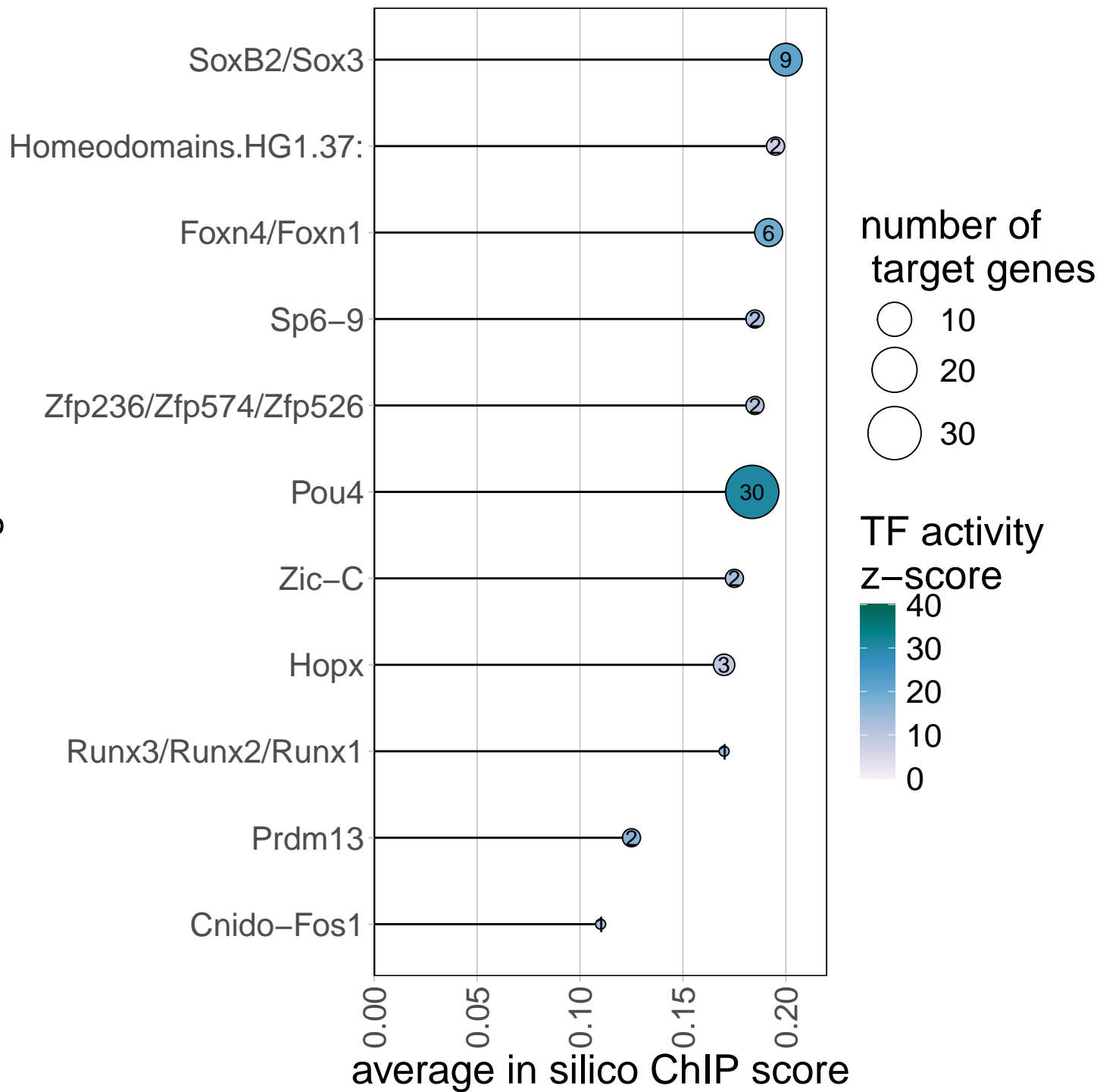
neuron_Pou4_FoxL2_2_module_3

gene



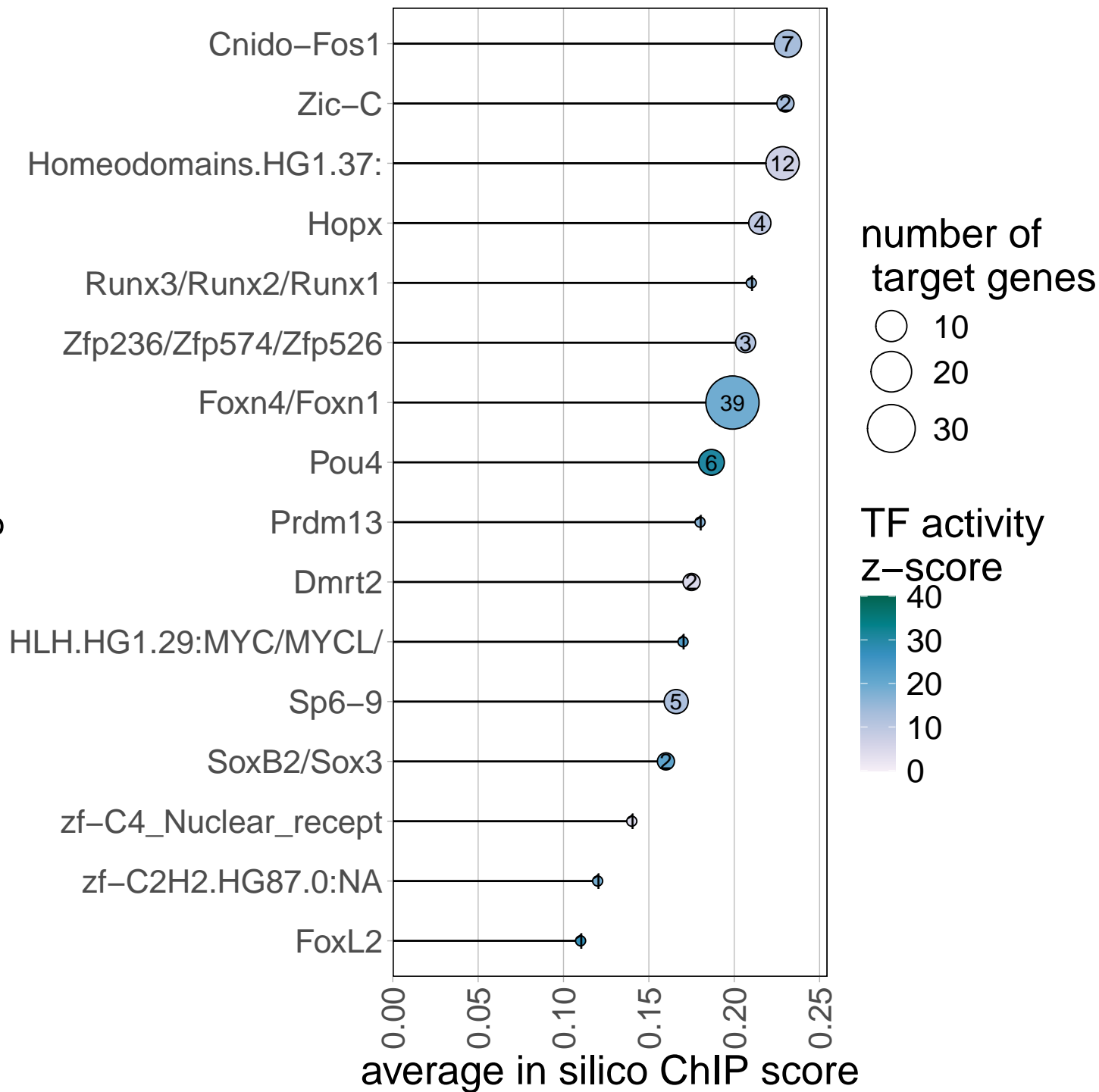
neuron_Pou4_FoxL2_2_module_4

gene



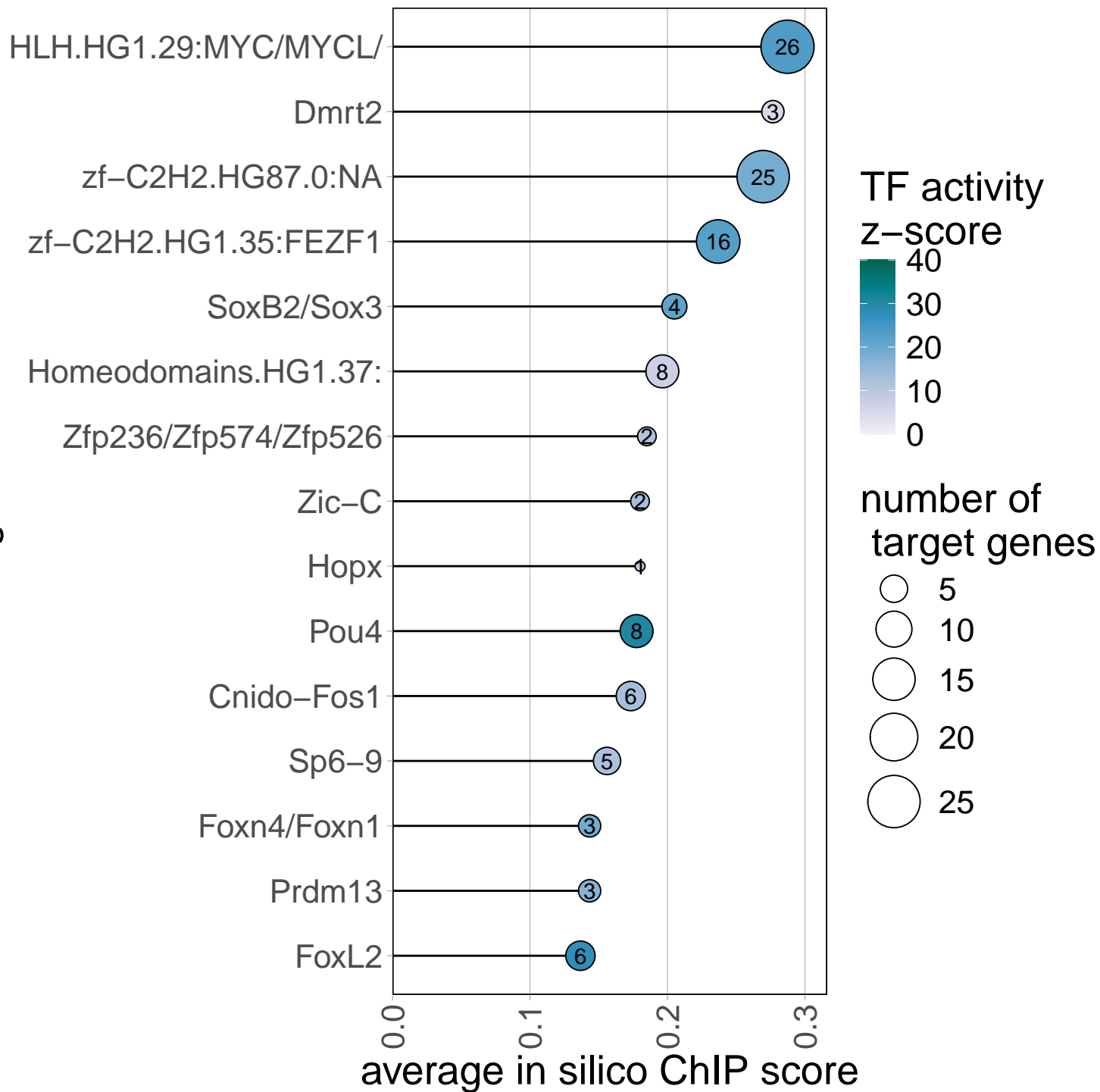
h1>neuron_Pou4_FoxL2_2_module_5

gene



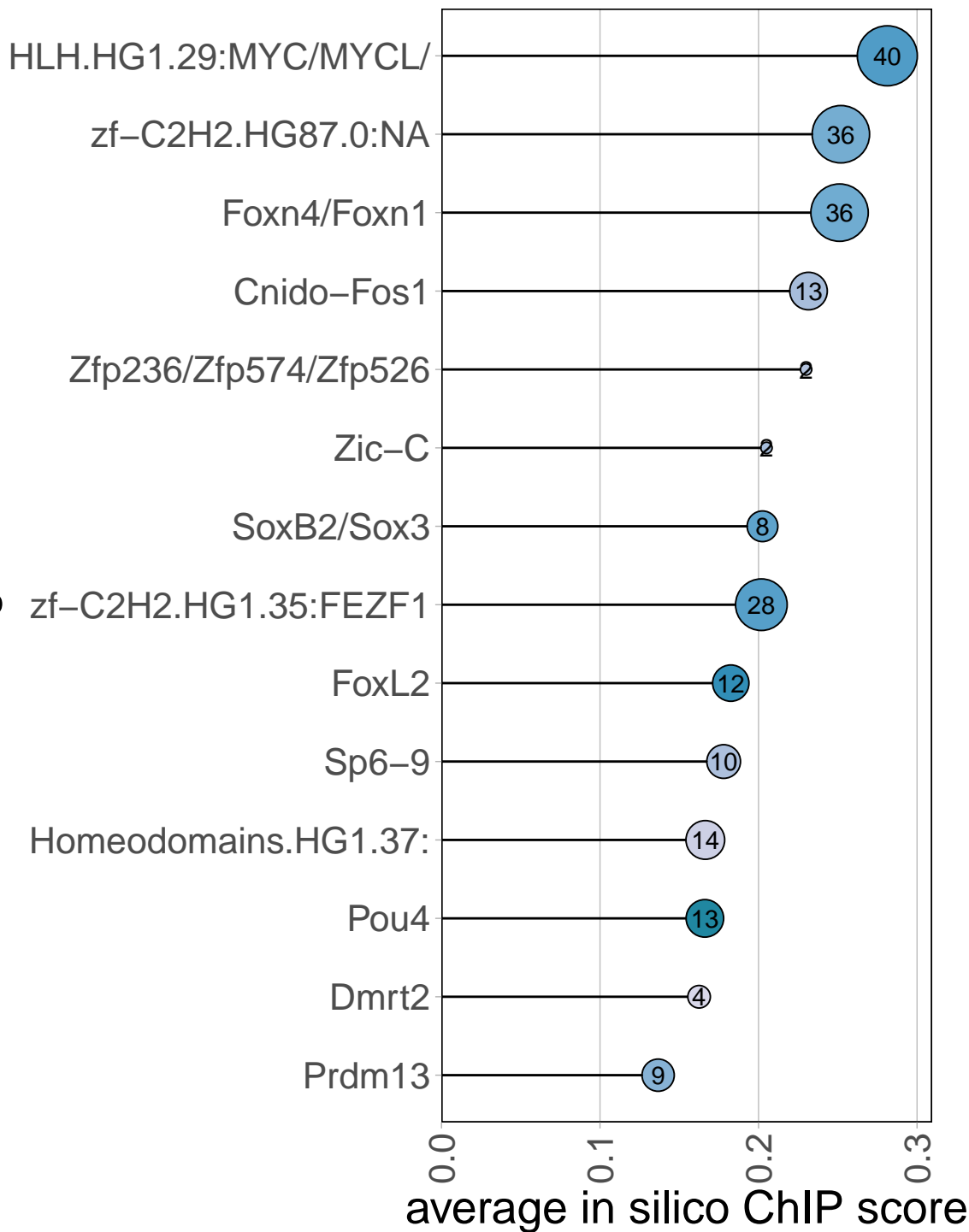
neuron_Pou4_FoxL2_2_module_6

gene

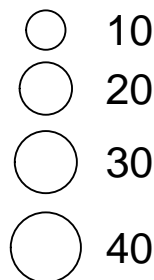


neuron_Pou4_FoxL2_2_module_7

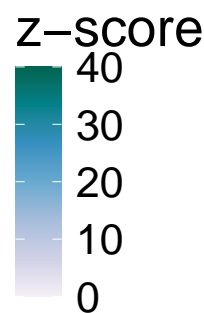
gene



number of target genes

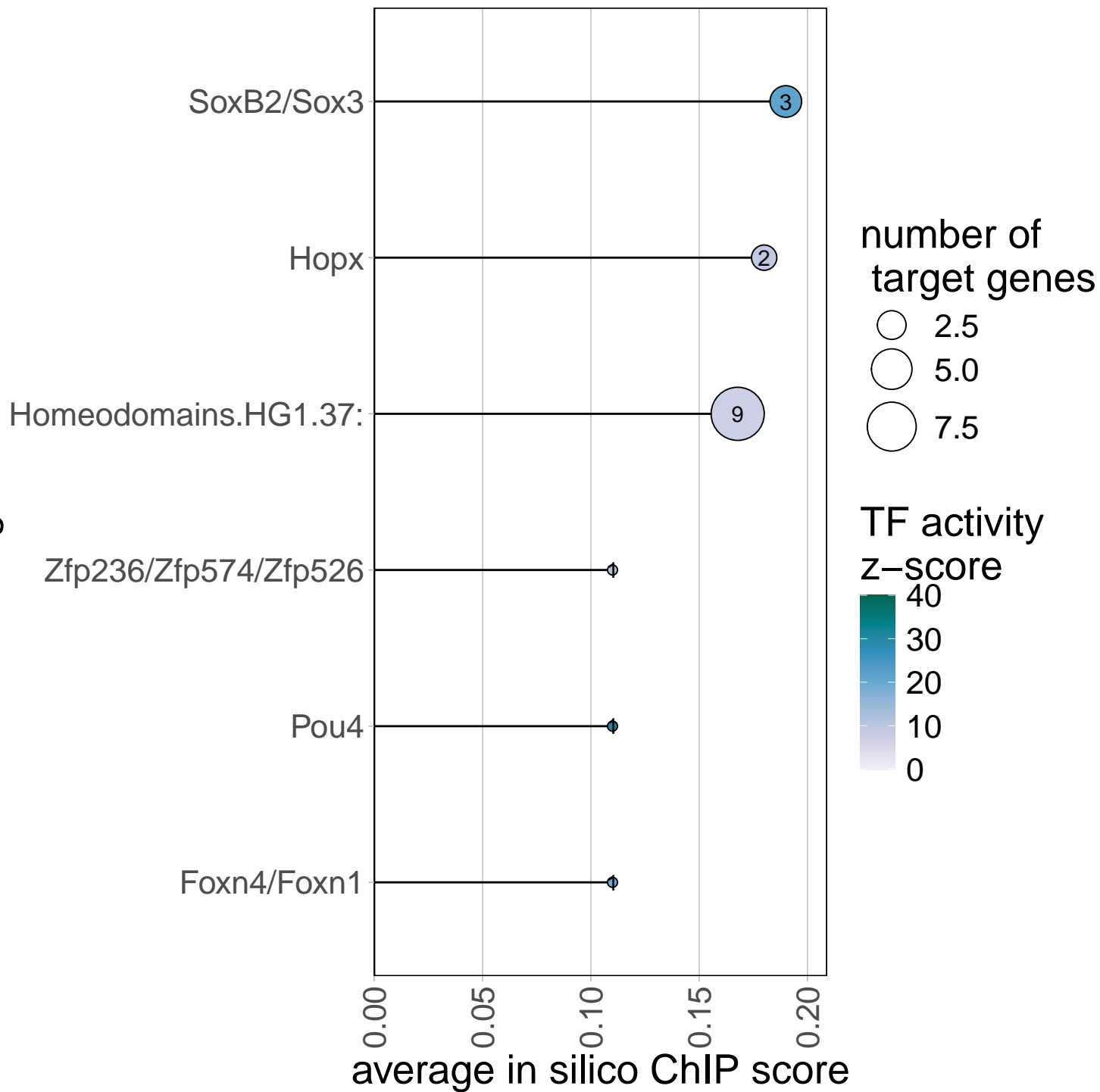


TF activity



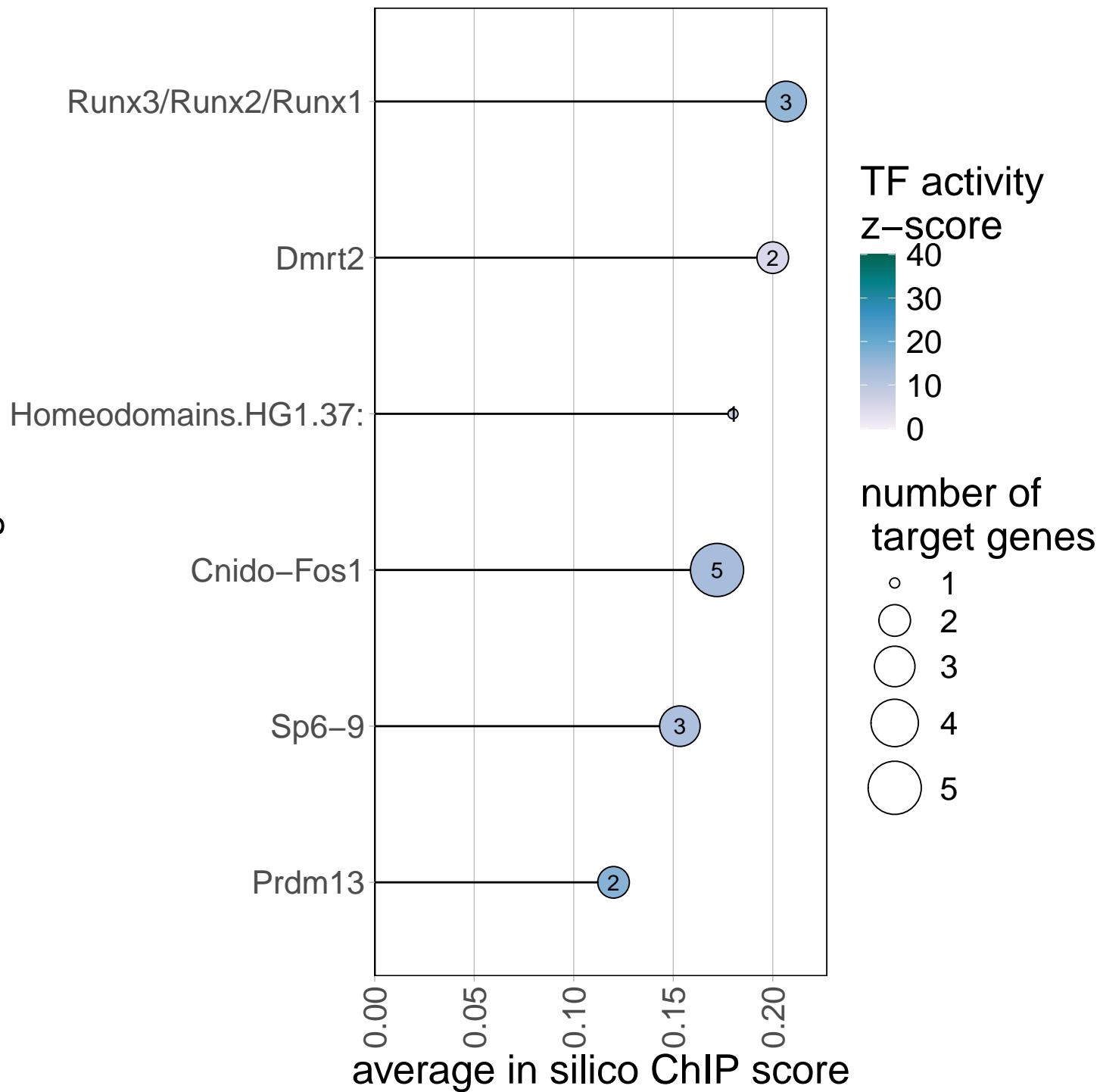
neuron_Pou4_FoxL2_2_module_8

gene



neuron_Pou4_FoxL2_2_module_9

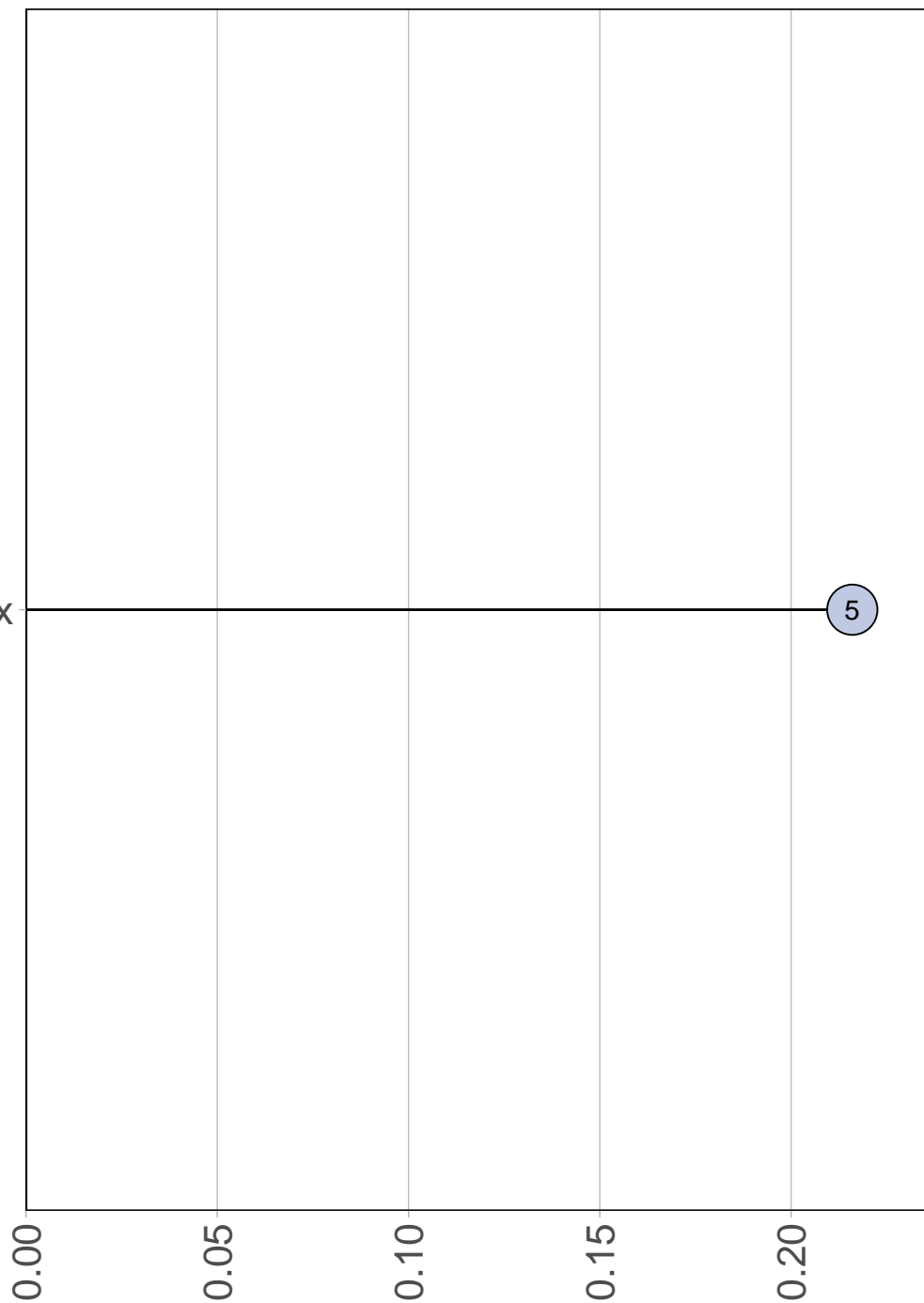
gene



neuron_Pou4_FoxL2_2_module_10

gene

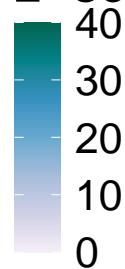
Hopx



number of
target genes

○ 5

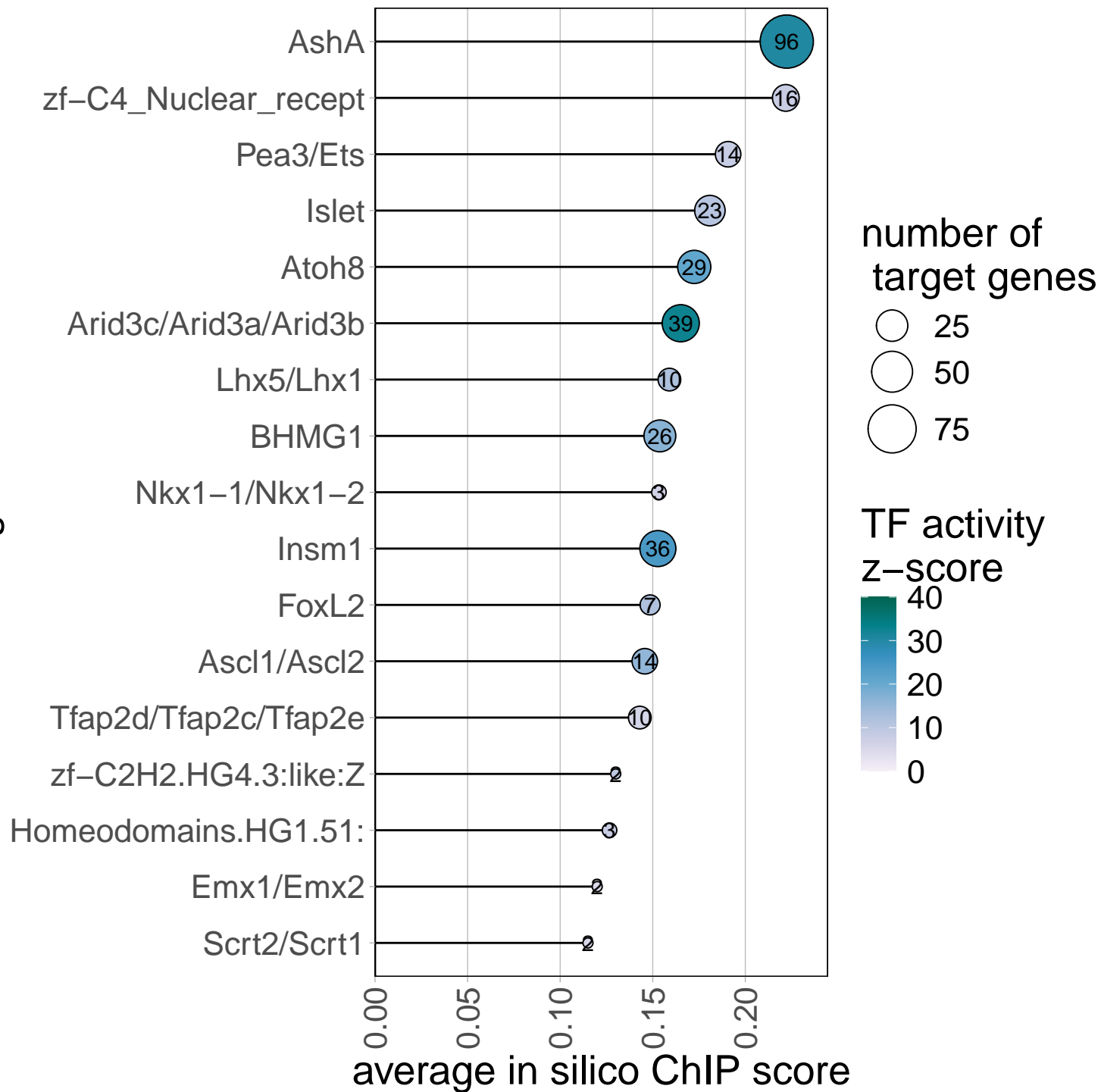
TF activity
z-score



average in silico ChIP score

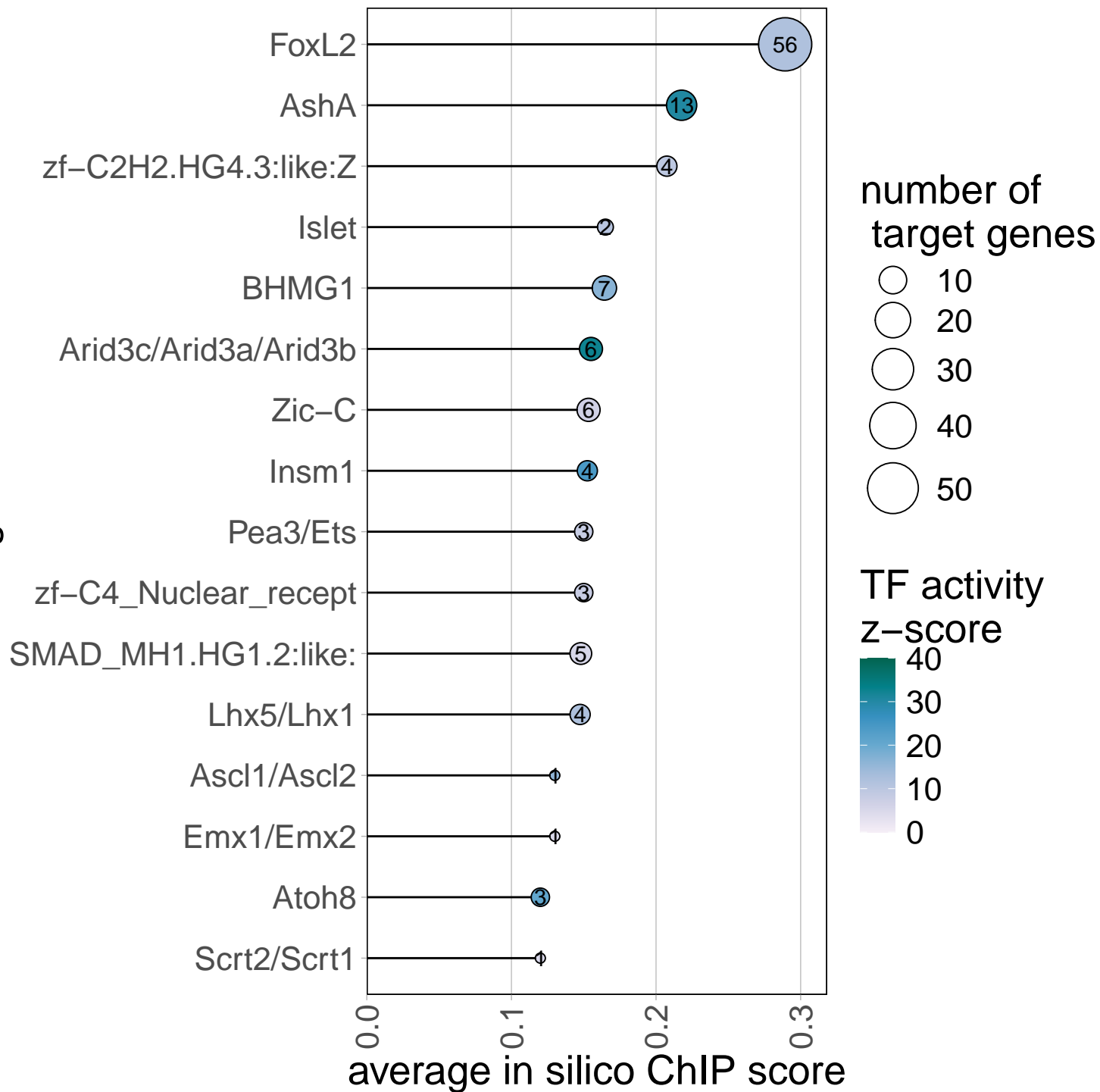
neuron_Pou4_FoxL2_3_module_1

gene



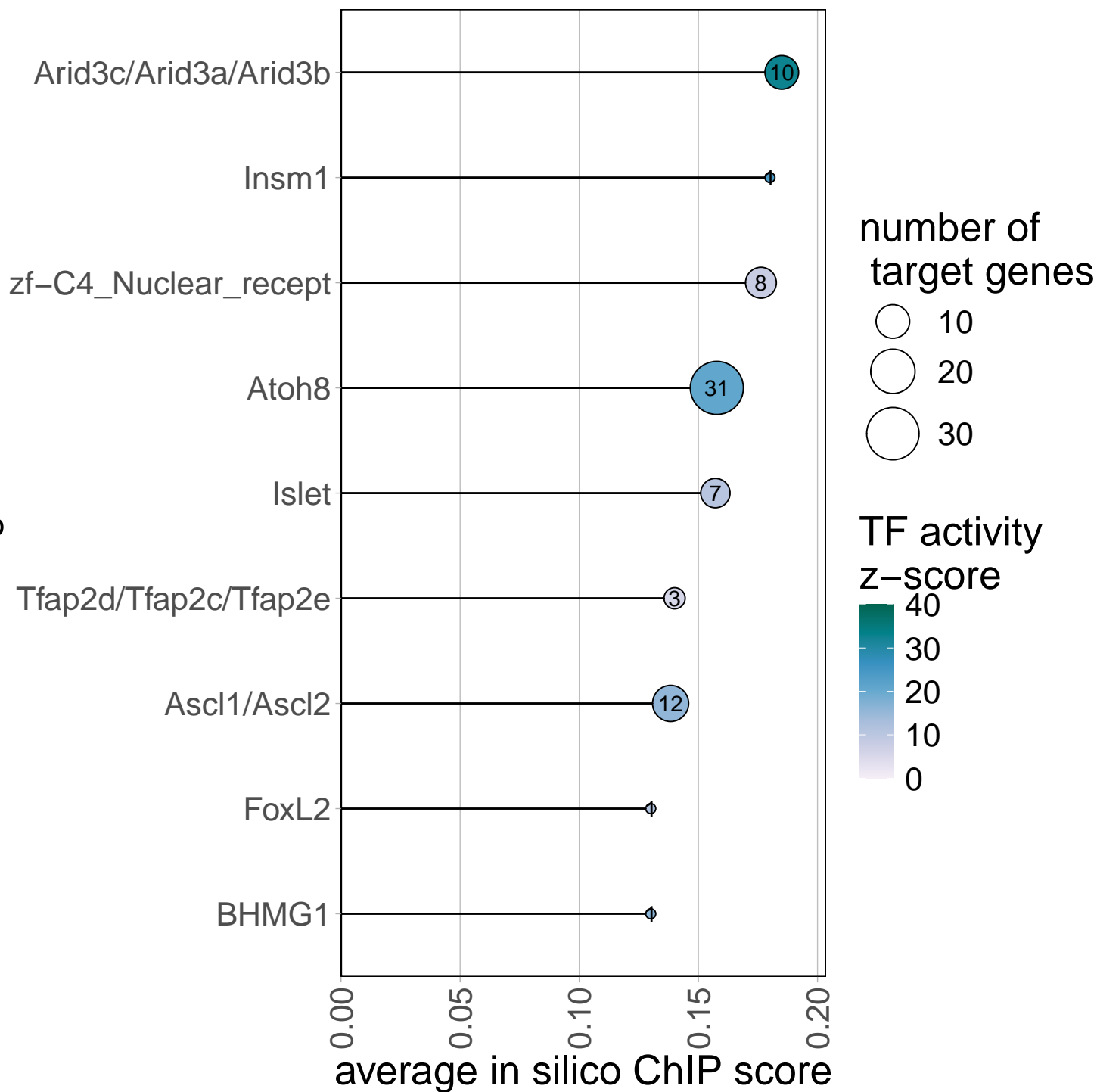
h1>neuron_Pou4_FoxL2_3_module_2

gene



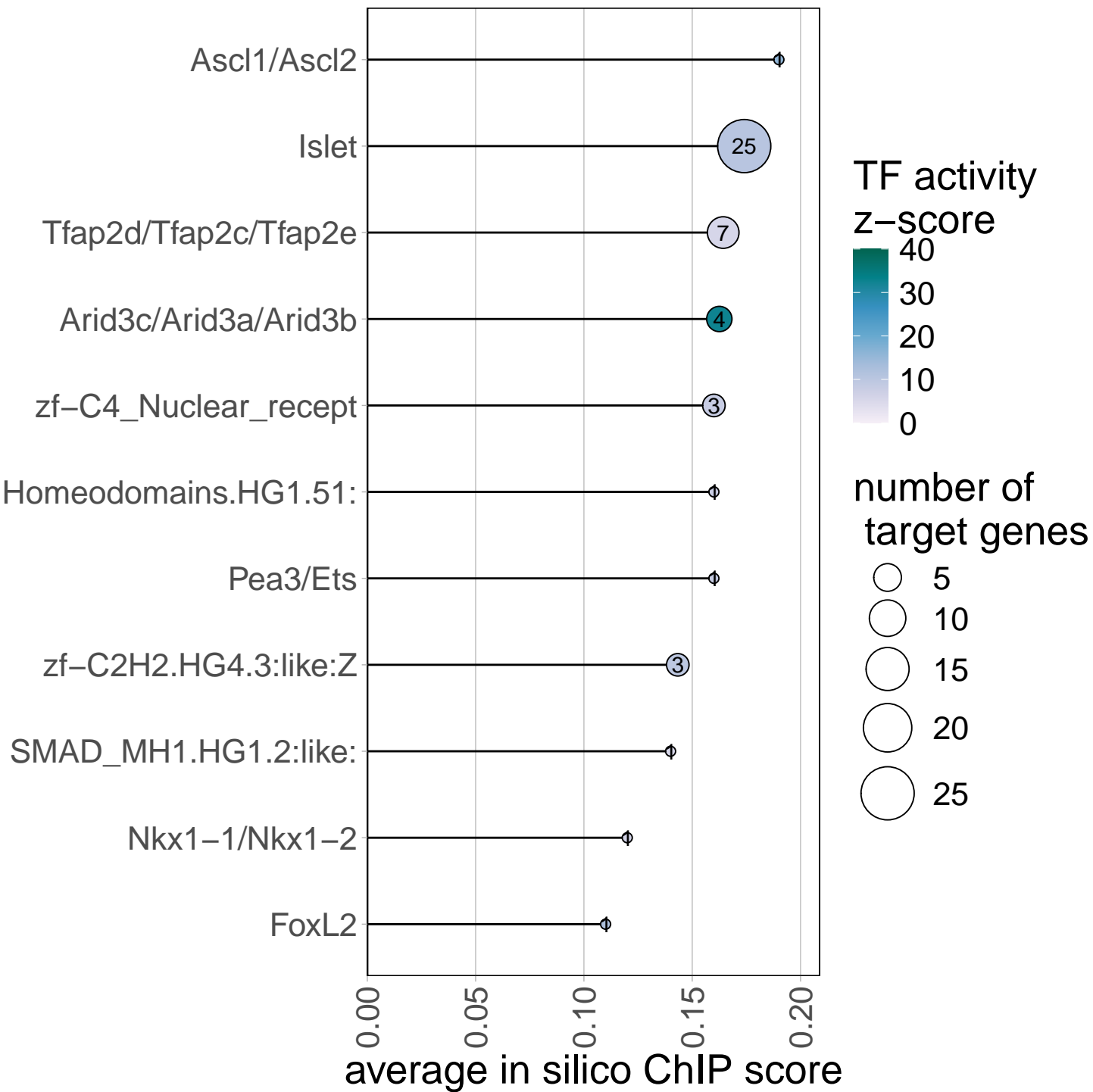
neuron_Pou4_FoxL2_3_module_3

gene



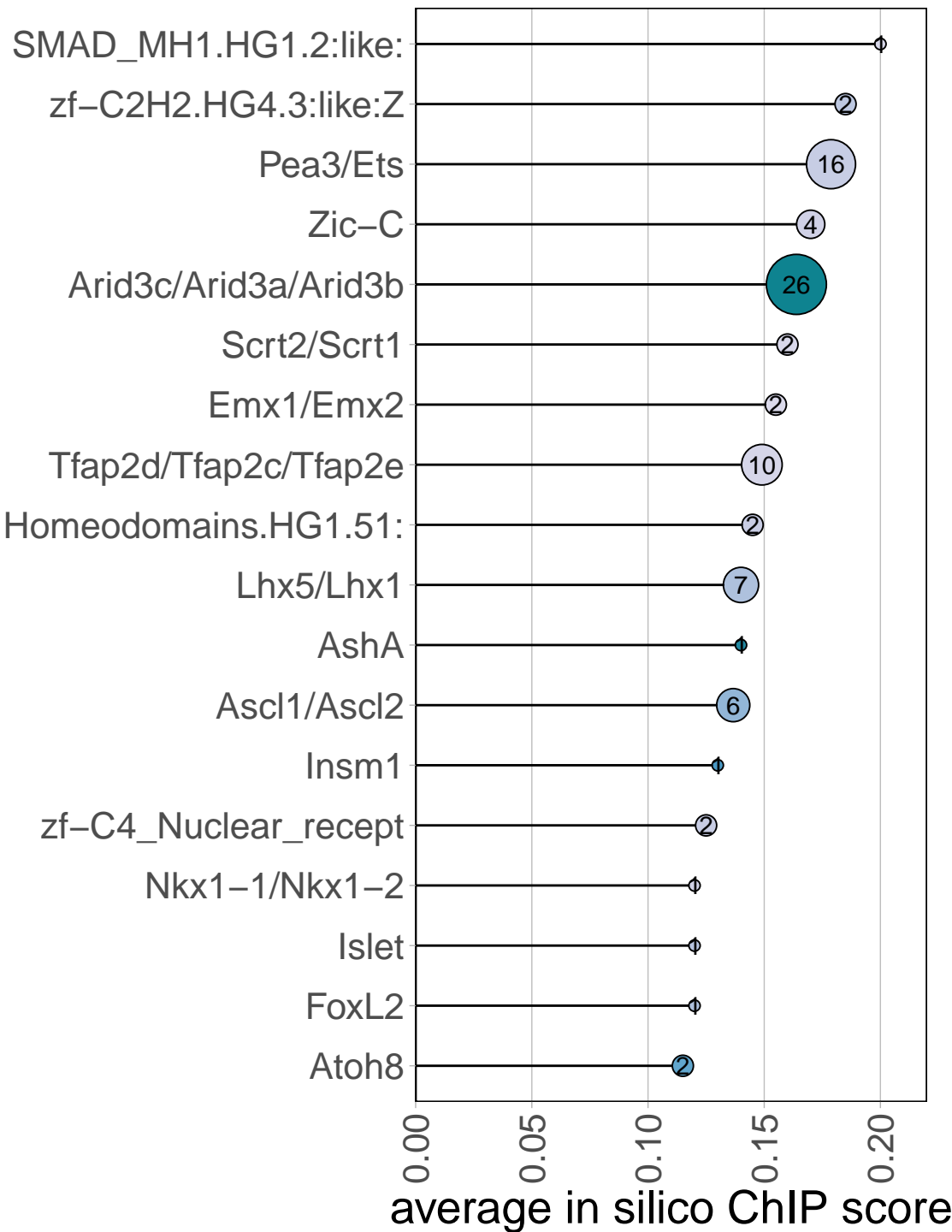
neuron_Pou4_FoxL2_3_module_4

gene

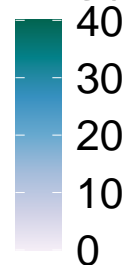


neuron_Pou4_FoxL2_3_module_5

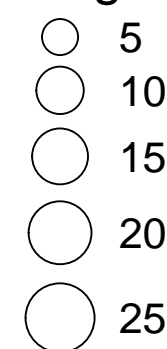
gene



TF activity
z-score

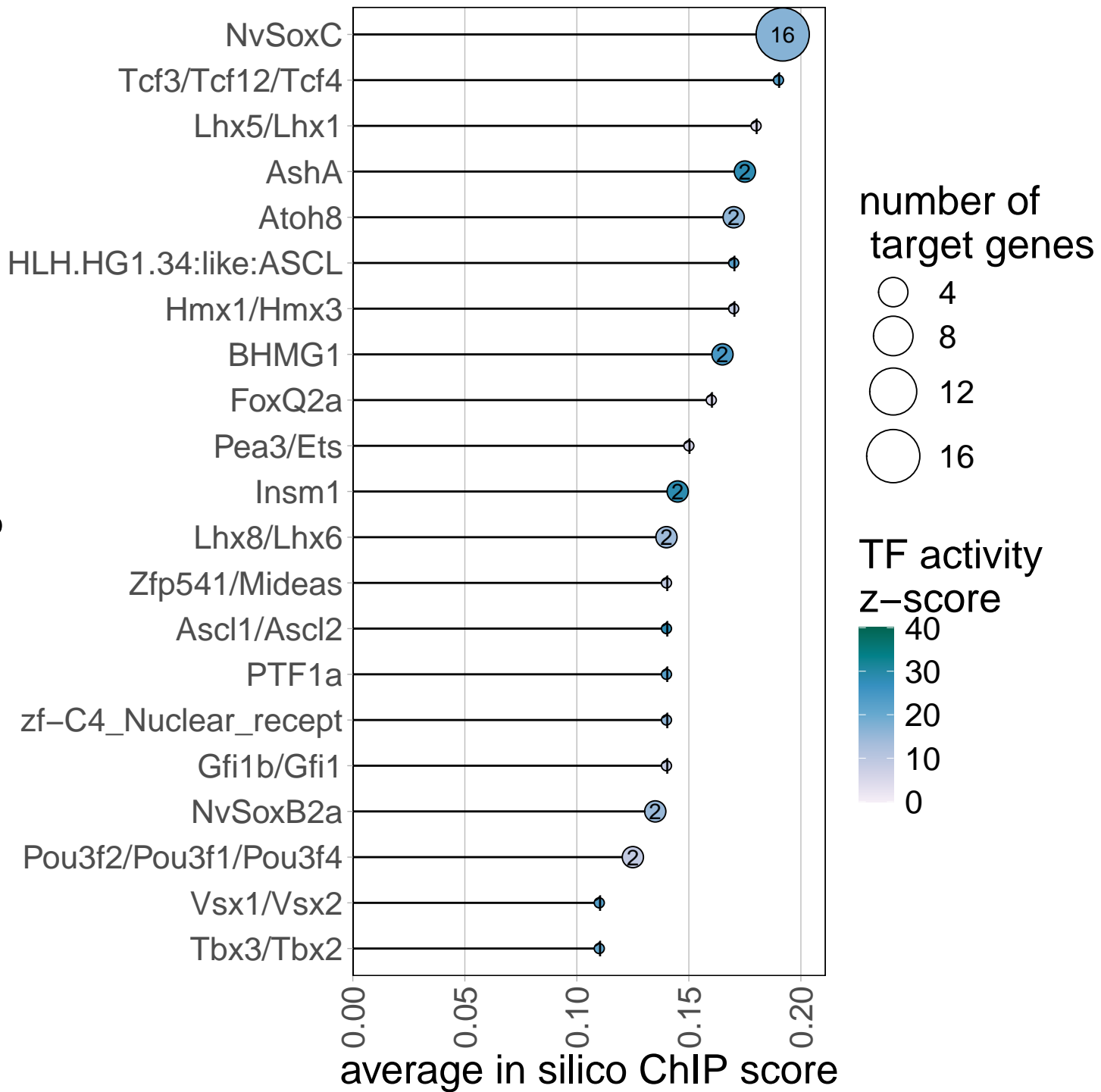


number of
target genes

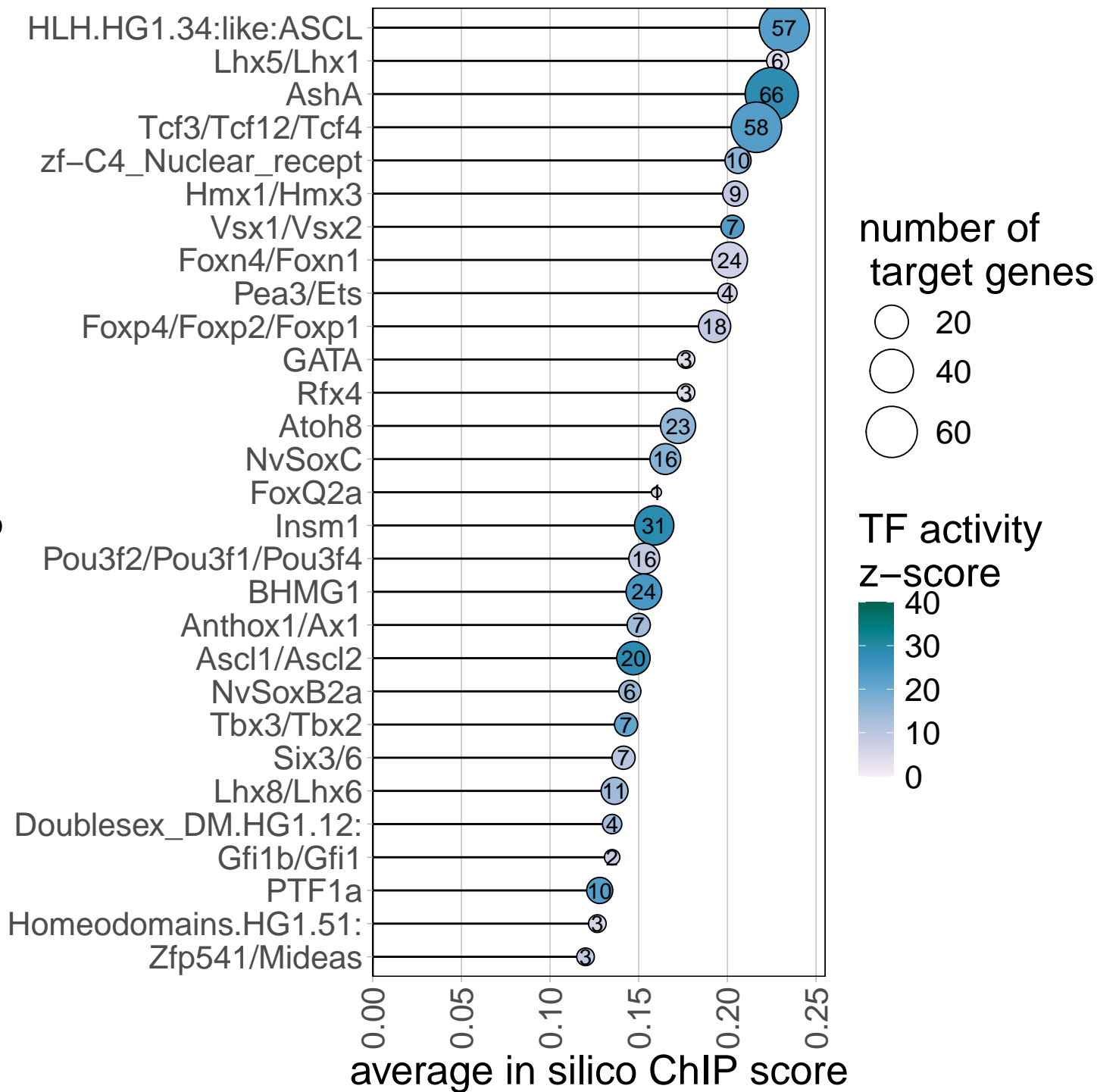


neuronal_gastrula_module_1

gene

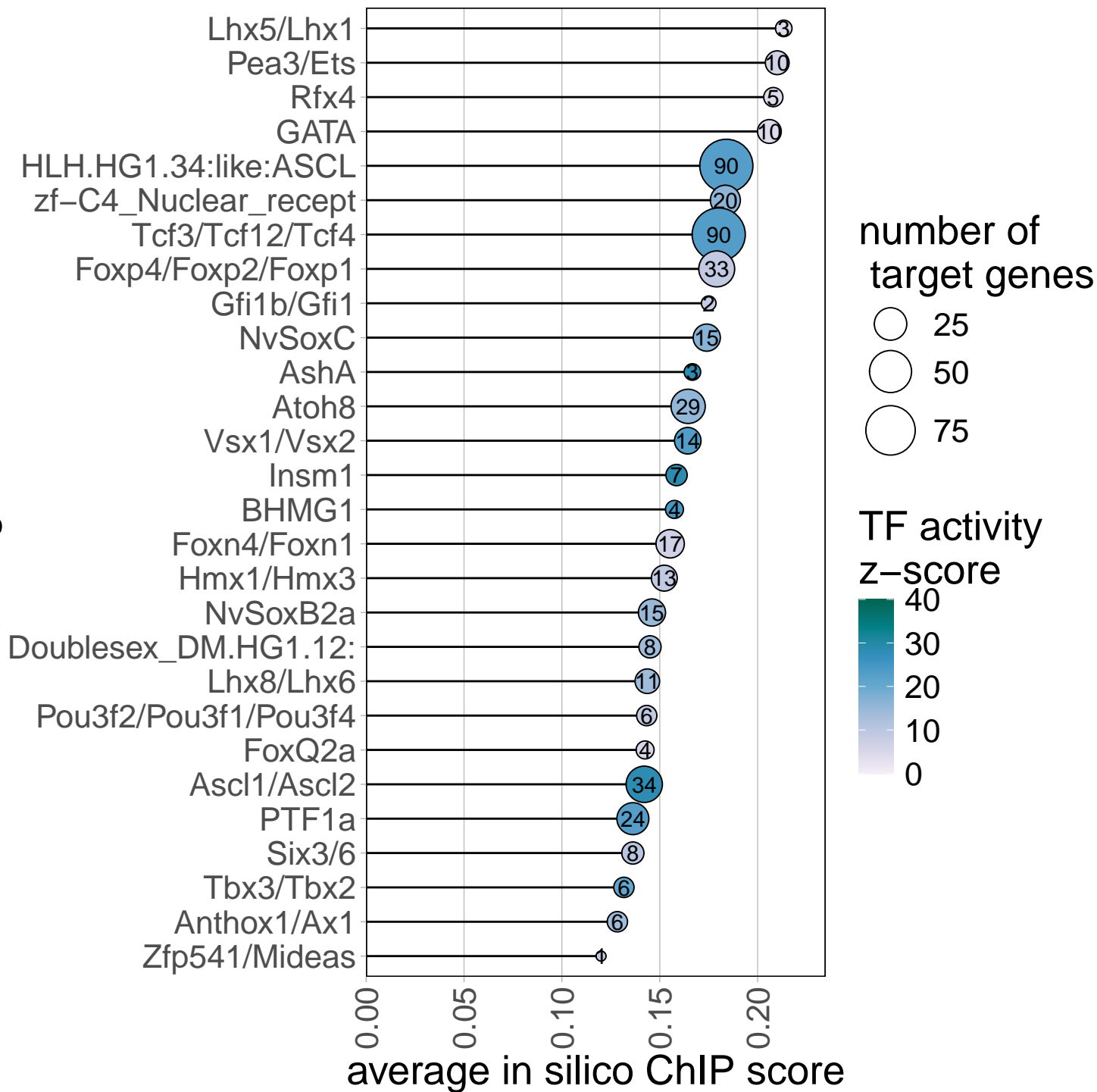


neuronal_gastrula_module_2



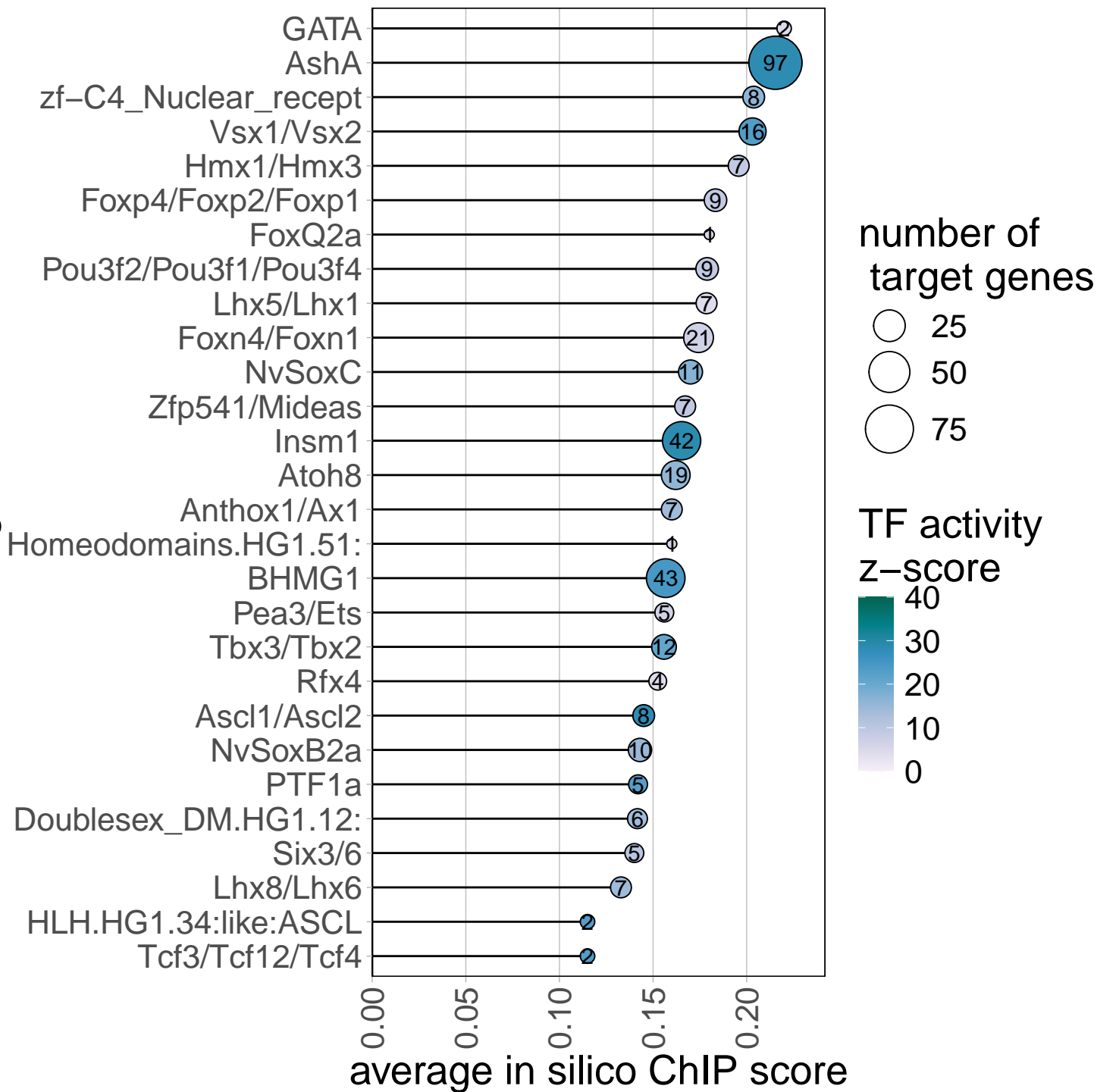
neuronal_gastrula_module_3

gene



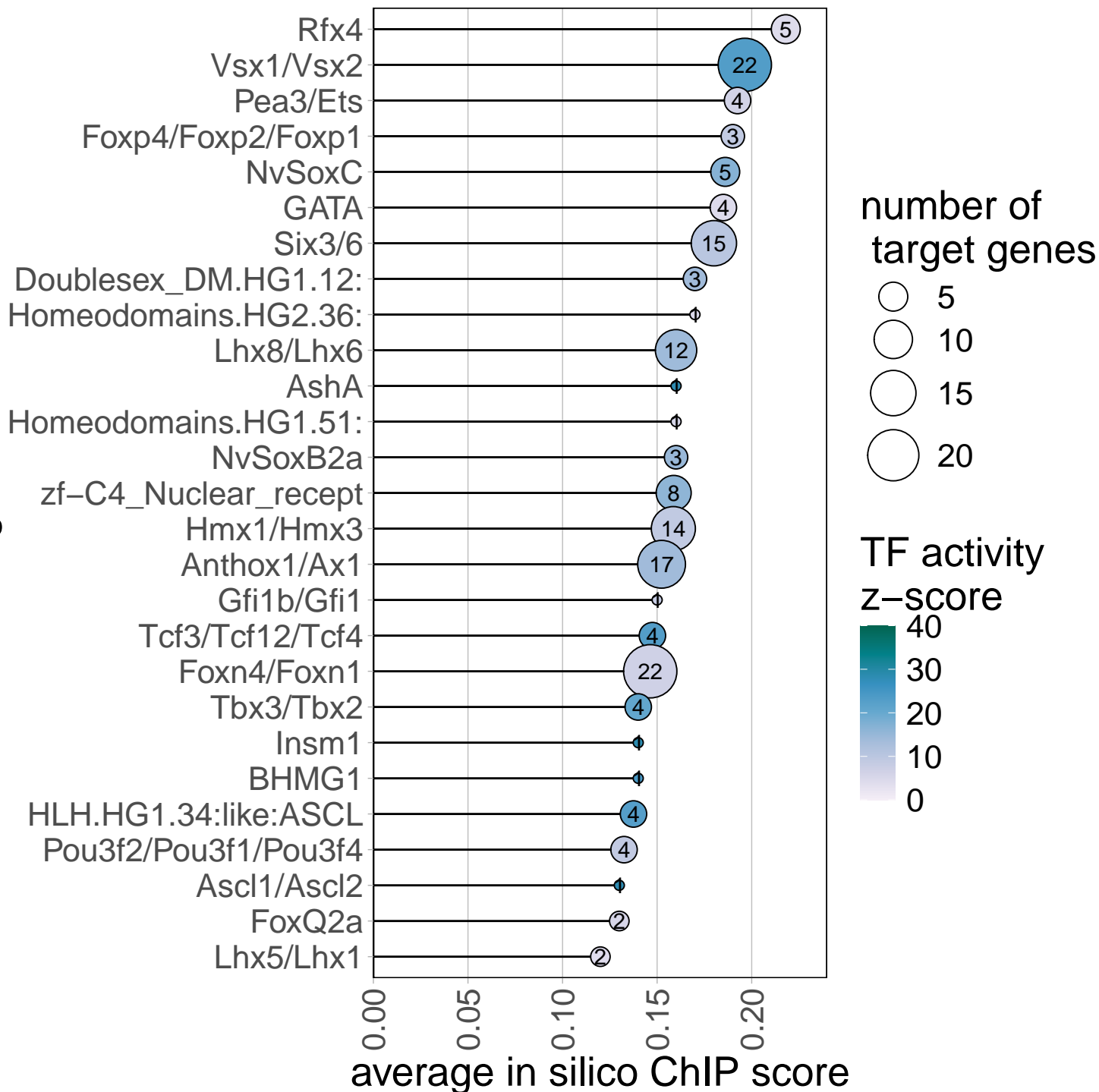
neuronal_gastrula_module_4

gene



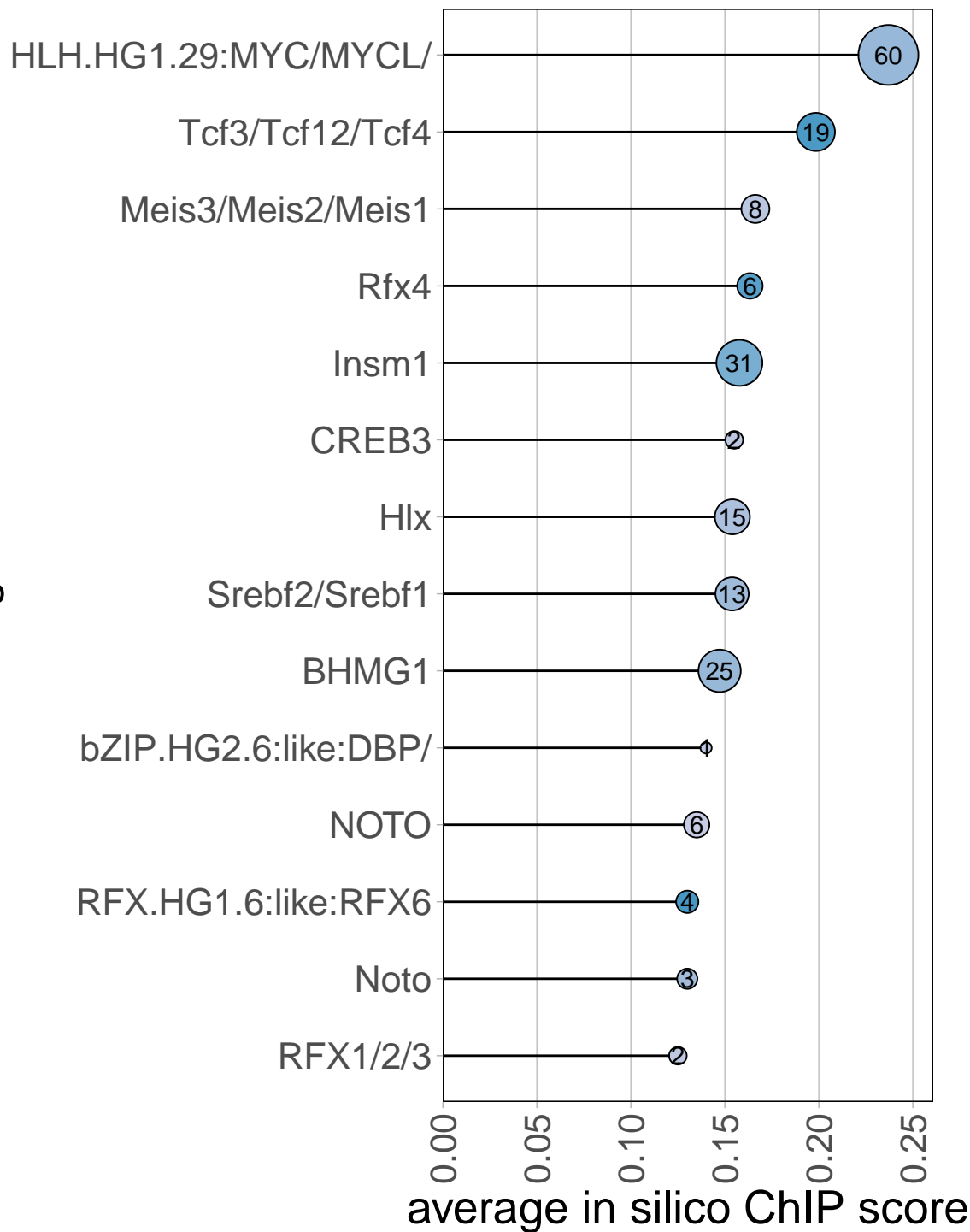
neuronal_gastrula_module_5

gene

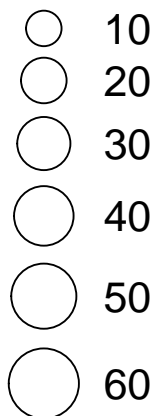


gland_module_1

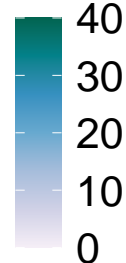
gene



number of target genes

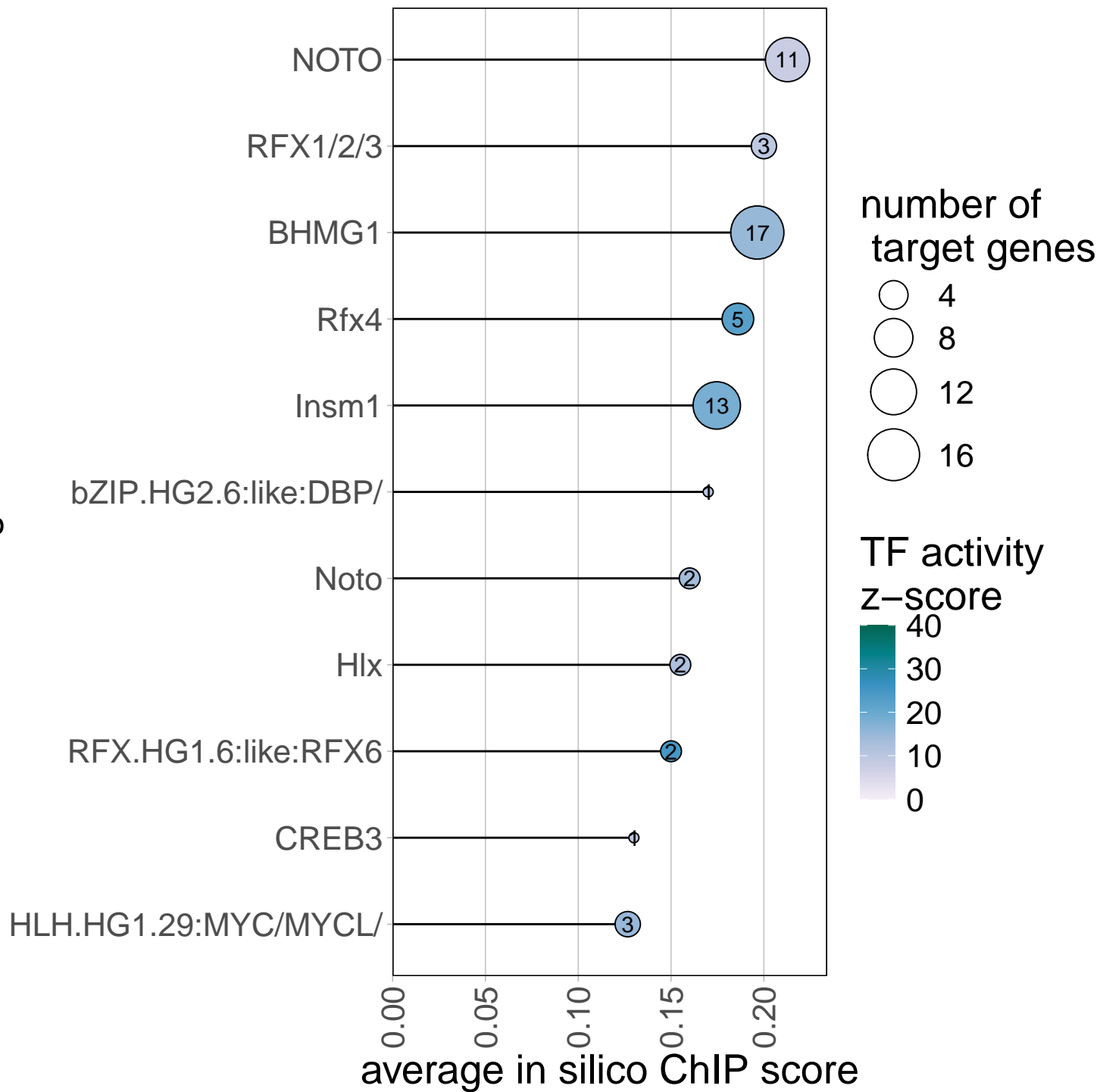


TF activity
z-score



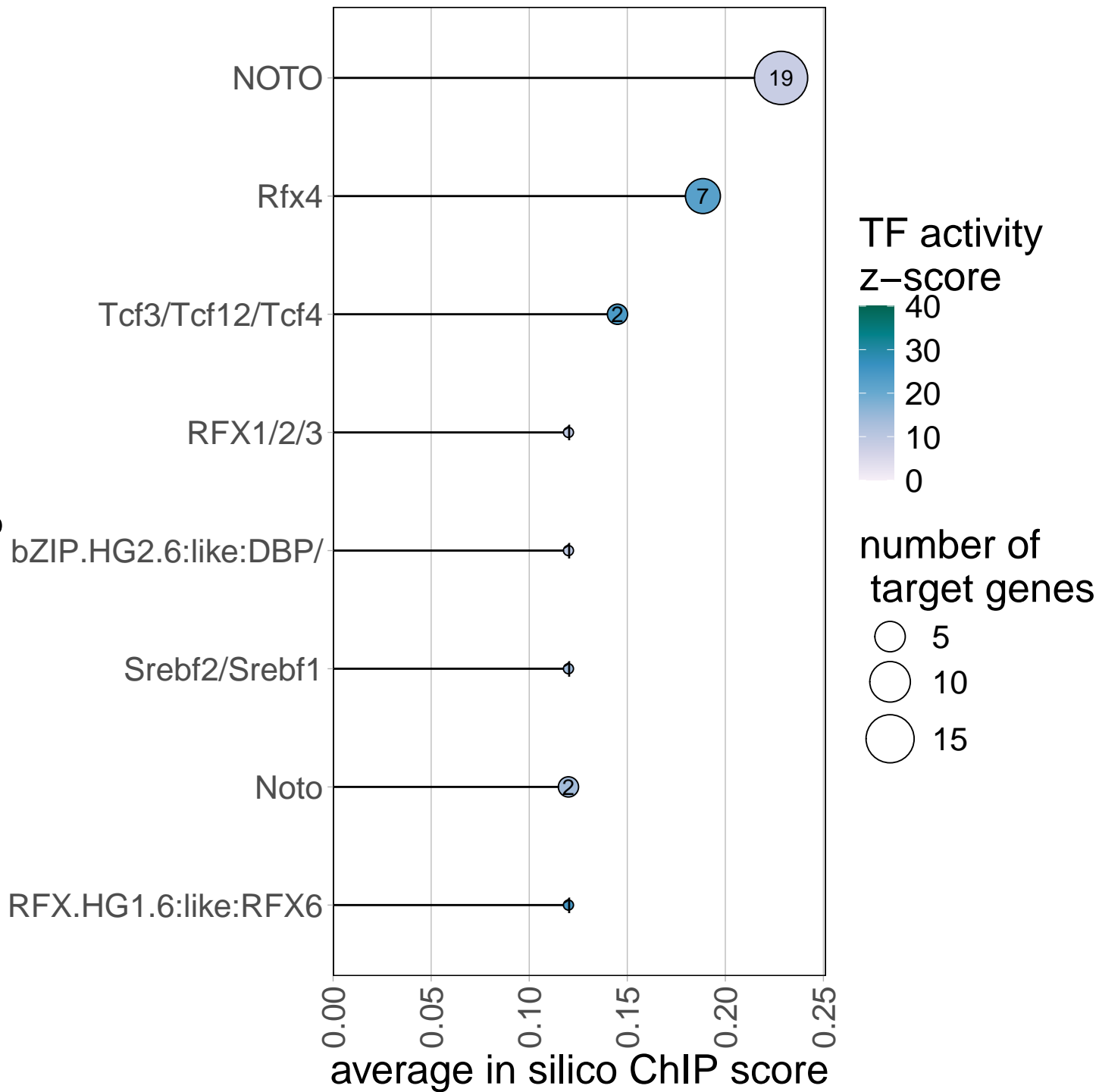
gland_module_2

gene



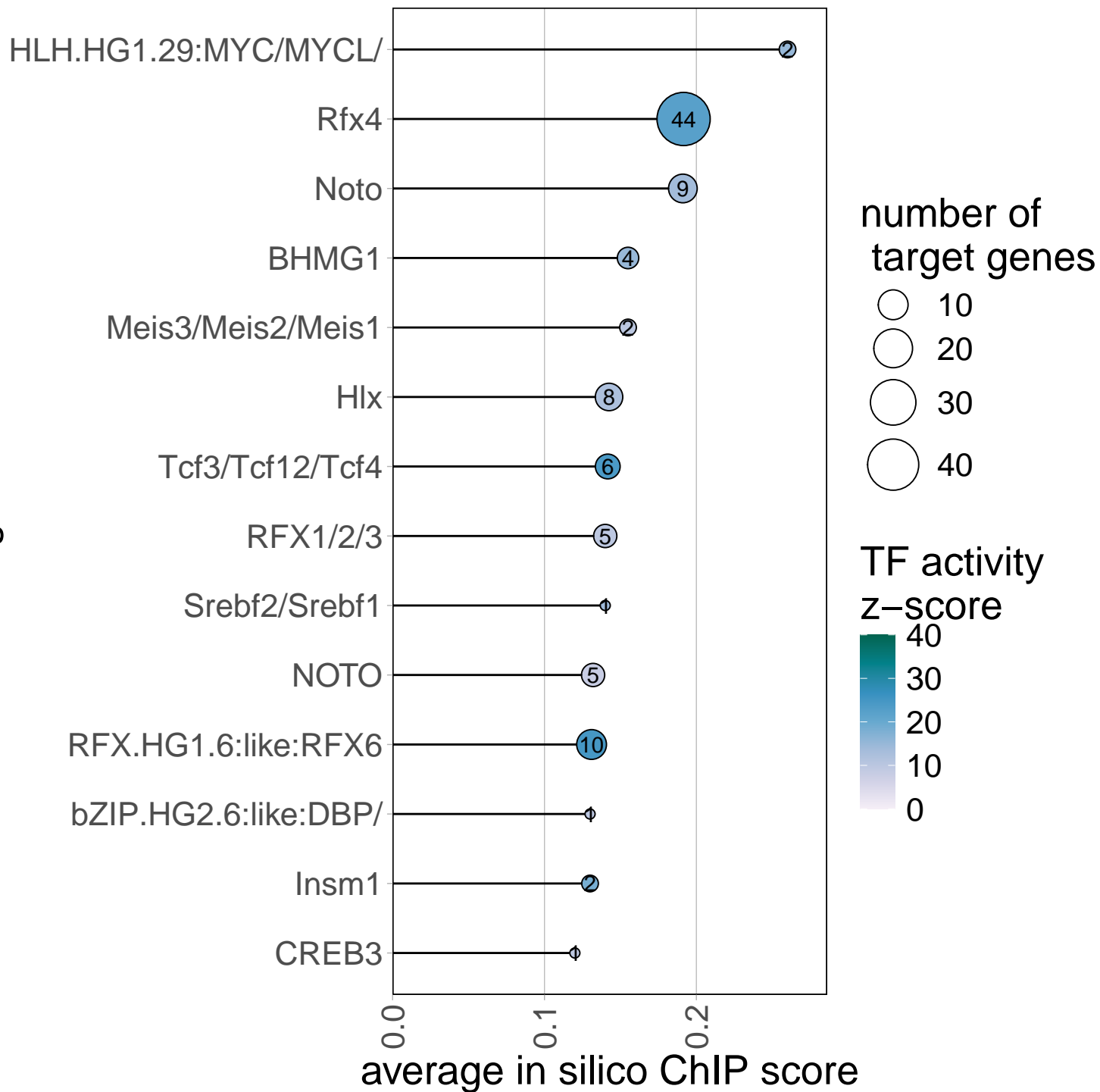
gland_module_3

gene



gland_module_4

gene



gland_module_5

gene

Meis3/Meis2/Meis1

NOTO

Hlx

Rfx4

Srebf2/Srebf1

0.00

0.05

0.10

0.15

average in silico ChIP score

number of
target genes

○ 2.5

○ 5.0

○ 7.5

○ 10.0

○ 12.5

TF activity

z-score

40

30

20

10

0

0

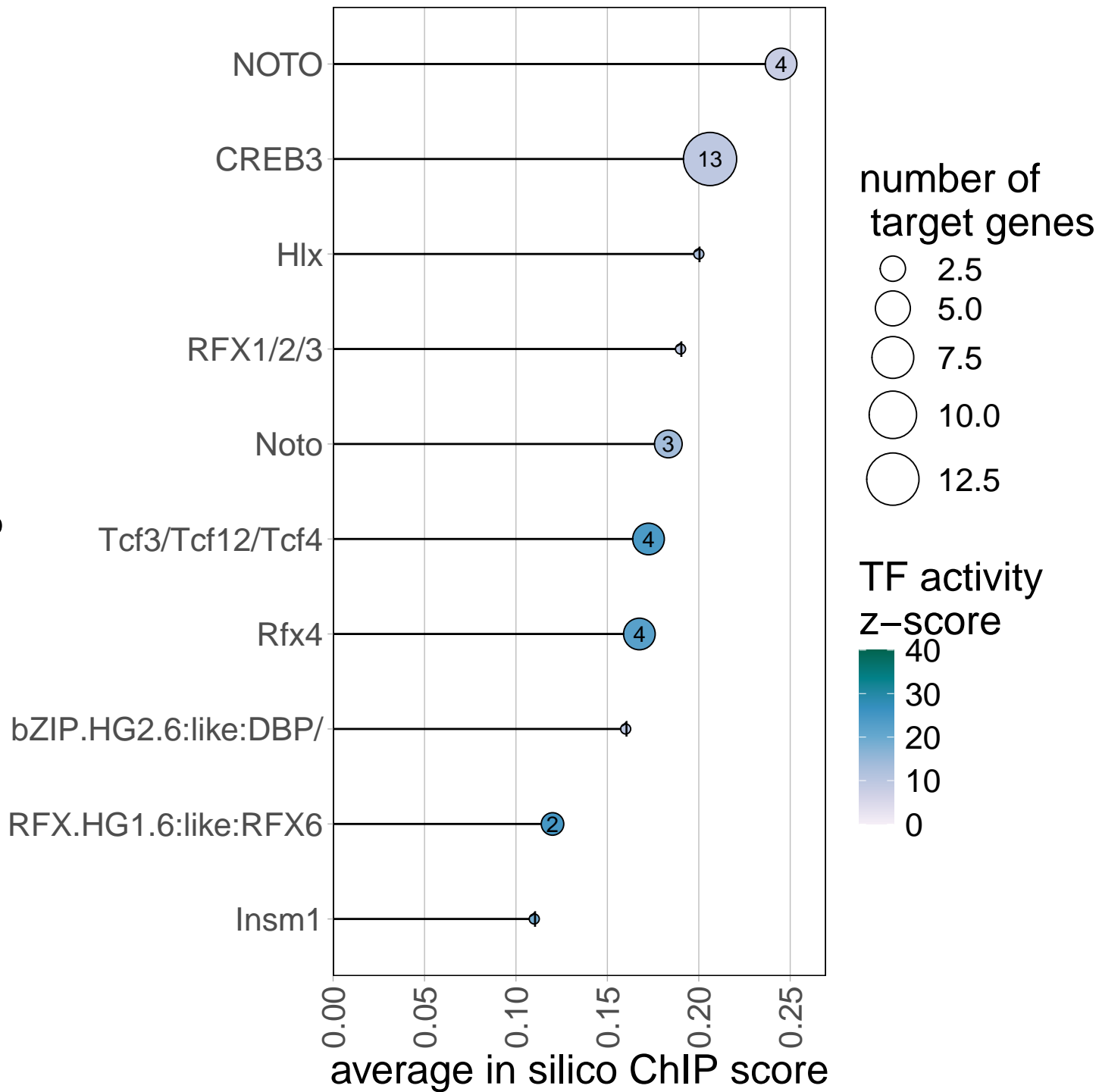
13

3

2

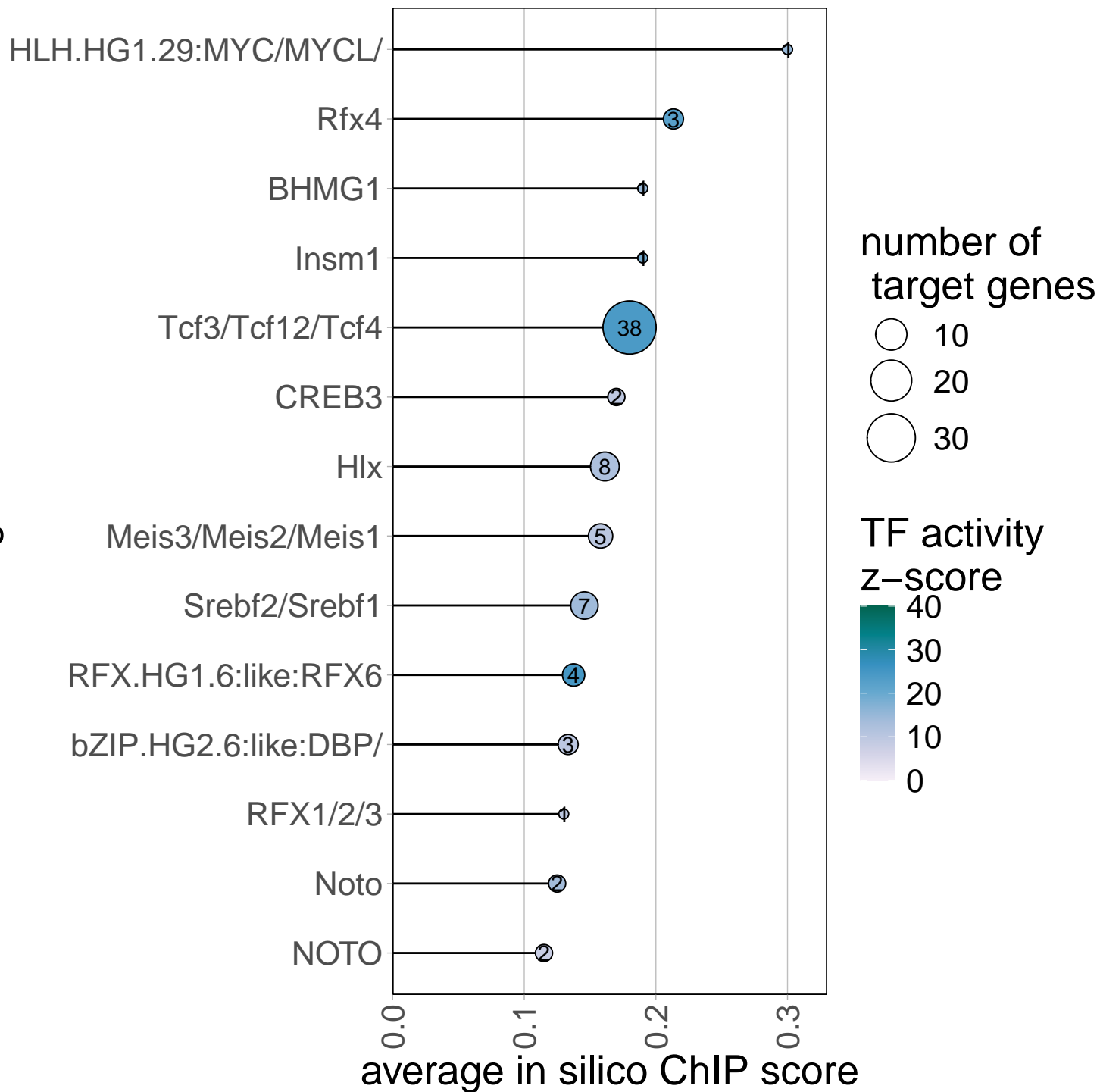
gland_module_6

gene



gland_module_7

gene



gland_module_8

gene

HLH.HG1.29:MYC/MYCL/

Srebf2/Srebf1

NOTO

Hlx

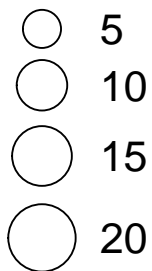
Tcf3/Tcf12/Tcf4

bZIP.HG2.6:like:DBP/

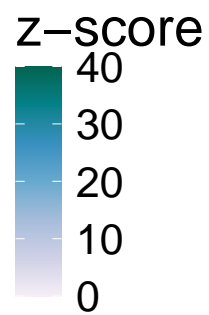
Insm1

Meis3/Meis2/Meis1

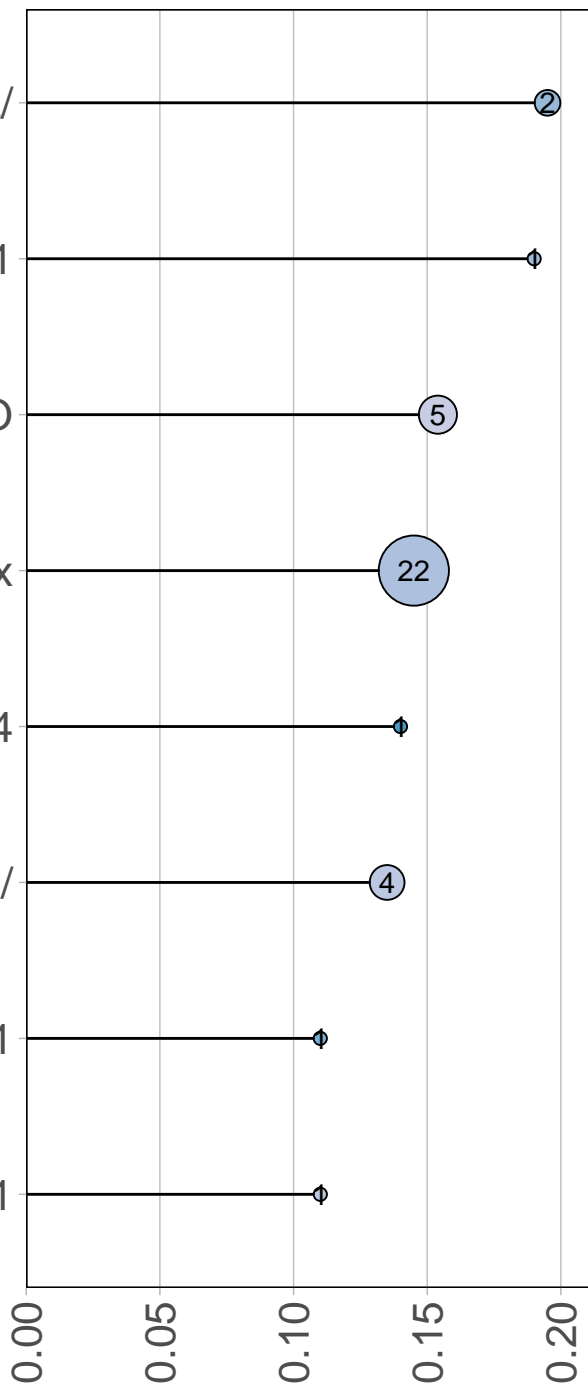
number of
target genes



TF activity

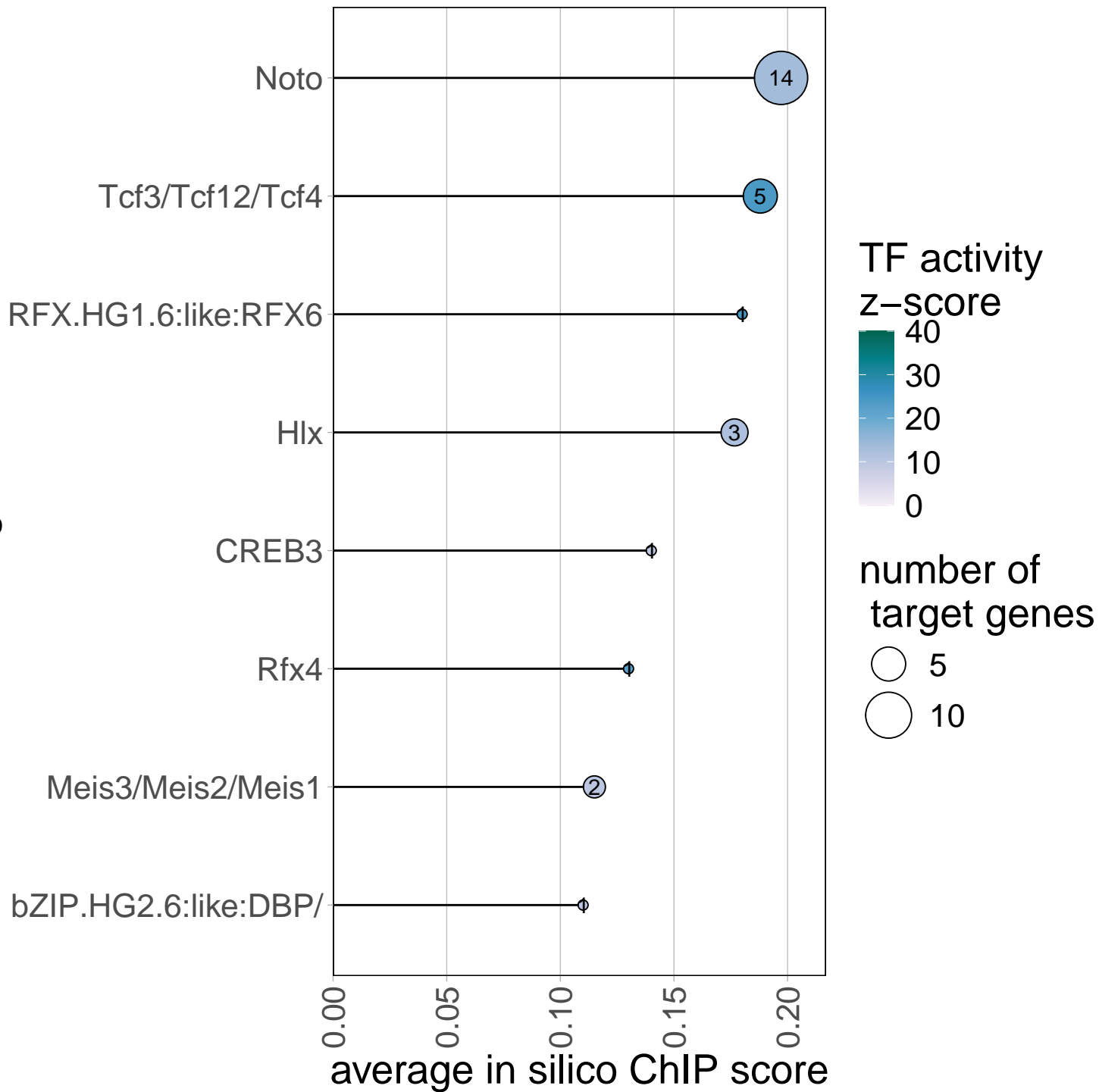


average in silico ChIP score



gland_module_9

gene



gland_module_10

gene

RFX.HG1.6:like:RFX6

NOTO

0.00

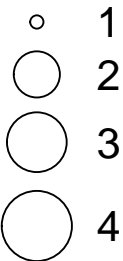
0.04

0.08

0.12

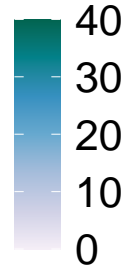
average in silico ChIP score

number of
target genes



TF activity

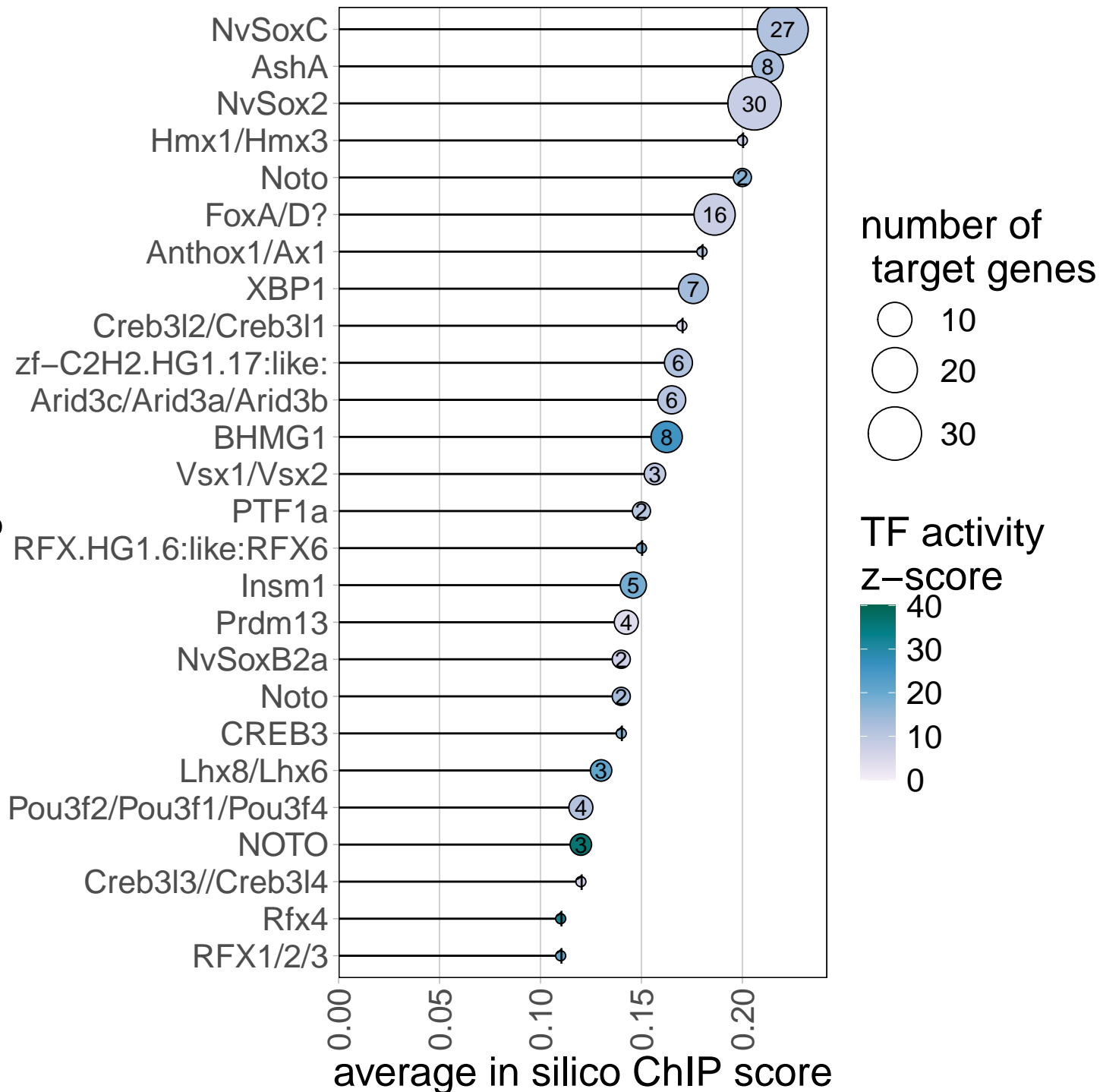
z-score



4

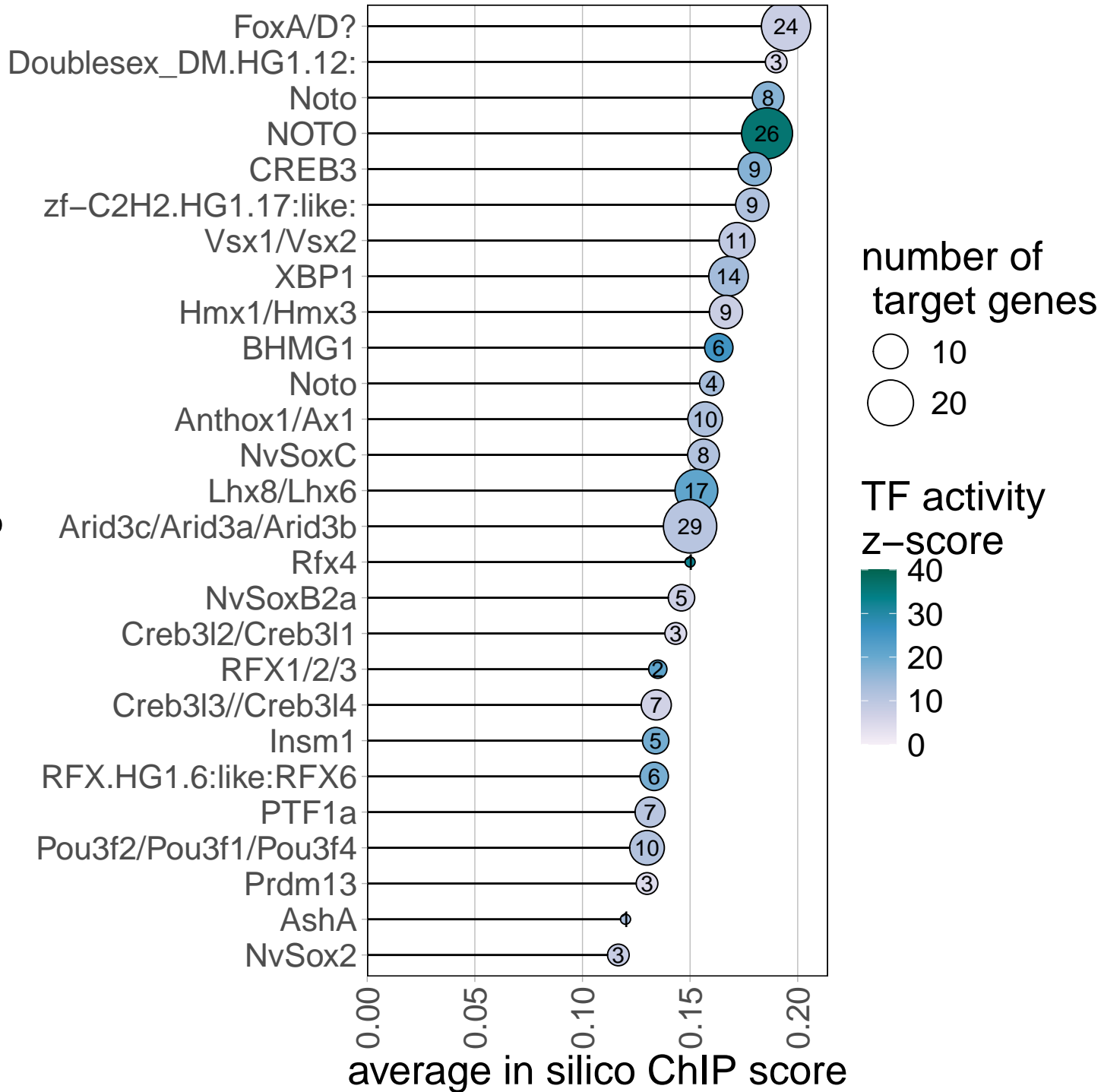
1

gland_mucin_module_1



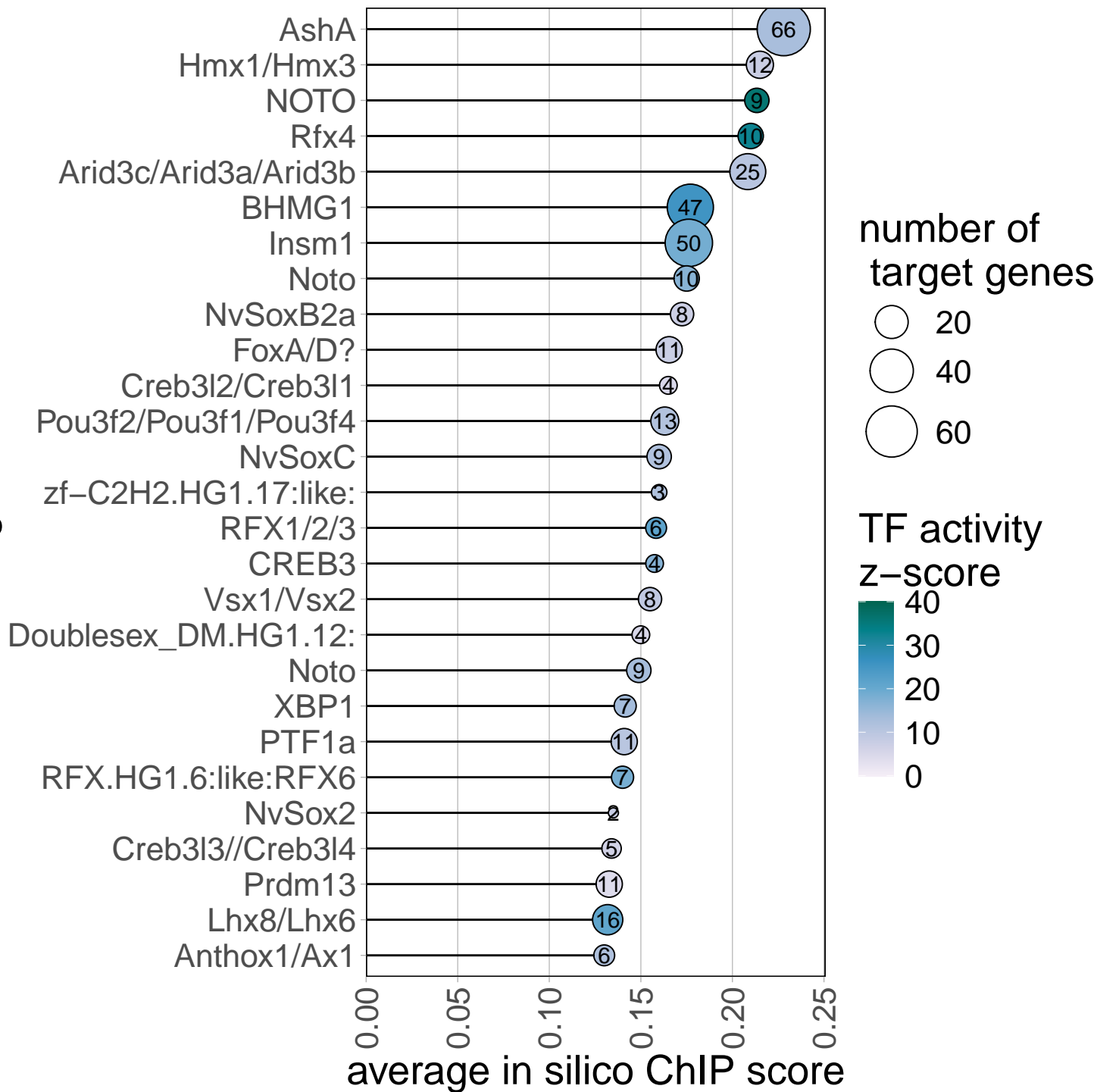
gland_mucin_module_2

gene



gland_mucin_module_3

gene



gland_mucin_module_4

gene

