

Supporting Information S2. The independent testing dataset S_T contains 500 non-NR proteins and 568 NR proteins classified into the following 7 main subfamilies according to **NucleaRDB** (<http://www.receptors.org/NR/>): (1) NR1: thyroid hormone like; (2) NR2: HNF4-like; (3) NR3: estrogen like; (4) NR4: nerve growth factor IB-like; (5) NR5: fushi tarazu-F1 like; (6) NR6: germ cell nuclear factor like; and (7) NR0: knirps and DAX like. Both the accession numbers and sequences are given. None of the proteins included here occurs in the training dataset S .

1. 568 NR proteins S_T^{NR}

(1) 231 NR1

>THA_CHICK

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>THA1_SHEEP

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>THB2_MOUSE

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>THB1_HUMAN

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>Q6F3J6_CONMY

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>THAA_XENLA

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>THB1_MOUSE

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>Q7T0K4_AMBME

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>THAB_XENLA

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>THA_RANCA

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>THA_SALSA

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>THB2_HUMAN

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>Q6F3J5_CONMY

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>THA_HIPHI

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>THA_NECMA

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>THA1_BRARE

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>Q766D2_ORYLA

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>Q5RZV6_PSEAM

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>THAA_PAROL

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>THA_HUMAN

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>THA_PIG

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>THA_RAT

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>Q80Y90_MOUSE

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>THA_MOUSE

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SP

>THAB_PAROL

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>Q800D8_SPAAU

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>THB_BRARE

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>THB_PAROL

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>Q9I878_CHICK

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>ECR_HELVI

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>Q6LC96_MOUSE

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>Q6MGB3_RAT

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>Q5REL6_PONPY

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>RXRA_XENLA

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>RXRB_BRARE

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>Q6P0E6_BRARE

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>TR4_RAT

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>Q9U7D9_LOCFI

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>USP_BOMMO

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>Q8VIJ3_MOUSE

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>Q8VIJ4_RAT

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>HNF4_DROME

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>Q62152_MOUSE

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>Q7T0T7_XENLA

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>Q922G8_MOUSE

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>Q9NFY1_TENMO

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>EAR2_MOUSE

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>Q5QP8_HUMAN

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>HNF4A_MOUSE

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>HNF4A_RAT

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>Q6PHH5_BRARE

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>Q9JJI9_TAMSI

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>Q7YRQ5_BOVIN

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(6) 0 NR6

(7) 6 NR0

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2. 500 non-NR proteins

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>E4YI86_OIKDI

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>E4YIW2_OIKDI

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>E4YIW3_OIKDI

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>E4YIW4_OIKDI

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>E4YIX0_OIKDI

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>E4YIY0_OIKDI

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>E4YIY2_OIKDI

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>E4YIY3_OIKDI

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>E4YI26_OIKDI

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>E4YJ73_OIKDI

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>E4YJ8_OIKDI

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>E4YJE4_OIKDI

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>PR2_DROME

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