

## Nectin-4

| Lineage   | Strain                               | Site I |     |     |     |     |     |     |     |     |     |     |     |     |     | Site II |     |     |     | Site III |     |     |     |  |  |
|-----------|--------------------------------------|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------|-----|-----|-----|----------|-----|-----|-----|--|--|
|           |                                      | 520    | 522 | 537 | 539 | 454 | 455 | 458 | 459 | 460 | 461 | 478 | 479 | 494 | 495 | 501     | 496 | 383 | 384 | 385      | 387 | 495 | 496 |  |  |
| PDV       | KC802221_PDV_WaddenSea_seal_NL_1988  | Y      | V   | Y   | Y   | P   | K   | T   | I   | L   | G   | I   | L   | I   | Q   | D       | T   | K   | R   | R        | Y   | Q   | T   |  |  |
| Caspian   | PC0046_seal_KZ_2000                  | Y      | I   | Y   | Y   | P   | K   | T   | I   | L   | G   | V   | L   | I   | Q   | D       | T   | Q   | R   | K        | Y   | Q   | T   |  |  |
|           | PC0021_seal_AZ_2000                  | Y      | I   | Y   | Y   | P   | K   | T   | I   | L   | G   | V   | L   | I   | Q   | D       | T   | Q   | R   | K        | Y   | Q   | T   |  |  |
|           | PC0020_seal_KZ_2000                  | Y      | I   | Y   | Y   | P   | K   | T   | I   | L   | G   | V   | L   | I   | Q   | D       | T   | Q   | R   | K        | Y   | Q   | T   |  |  |
| America-1 | JN896987_SnyderHill_1950             | Y      | I   | Y   | Y   | P   | K   | T   | I   | L   | G   | V   | L   | I   | Q   | D       | T   | Q   | R   | K        | Y   | Q   | T   |  |  |
|           | AF378705_Ondersteopoort_1939         | Y      | I   | Y   | Y   | P   | K   | T   | I   | V   | G   | V   | L   | I   | Q   | D       | T   | Q   | R   | K        | Y   | Q   | T   |  |  |
| Europe-1  | S460_raccoon_DE_2015                 | Y      | I   | Y   | Y   | P   | K   | T   | V   | L   | G   | V   | L   | I   | Q   | D       | T   | Q   | R   | K        | Y   | Q   | T   |  |  |
|           | S466_raccoon_DE_2015                 | Y      | I   | Y   | Y   | P   | K   | T   | V   | L   | G   | V   | L   | I   | Q   | D       | T   | Q   | R   | K        | Y   | Q   | T   |  |  |
|           | S272_fox_DE_2016                     | Y      | I   | Y   | Y   | P   | K   | T   | V   | L   | G   | V   | L   | I   | Q   | D       | T   | Q   | R   | K        | Y   | Q   | T   |  |  |
|           | AY386315_5804_dogV_DE_1989           | Y      | I   | Y   | Y   | P   | R   | T   | V   | L   | G   | V   | L   | I   | Q   | D       | T   | Q   | R   | K        | Y   | Q   | T   |  |  |
| America-3 | KF640687_R252_dogV_US_1974           | Y      | I   | Y   | Y   | P   | K   | T   | V   | L   | G   | V   | L   | I   | Q   | D       | T   | Q   | R   | K        | Y   | Q   | T   |  |  |
| America-2 | KU666057_RhodeIsland_raccoon_US_2012 | Y      | I   | Y   | Y   | P   | M   | T   | V   | L   | G   | V   | L   | I   | Q   | D       | T   | Q   | R   | K        | Y   | Q   | T   |  |  |
| Africa-1  | KU578256_SNP_lion_TZ_1994            | Y      | I   | Y   | Y   | P   | K   | T   | V   | L   | G   | V   | L   | I   | Q   | D       | T   | Q   | R   | K        | Y   | Q   | T   |  |  |
| Asia-4    | MH496773_2_dog_TH_2014               | Y      | I   | Y   | Y   | P   | K   | T   | V   | L   | G   | V   | L   | I   | Q   | D       | T   | Q   | R   | K        | Y   | Q   | T   |  |  |
| Arctic    | Baikal_seal RU_1988                  | Y      | I   | Y   | Y   | P   | K   | T   | I   | L   | G   | V   | L   | I   | Q   | D       | T   | Q   | R   | K        | Y   | Q   | T   |  |  |
|           | KX024708_11956_badger_IT_2015        | Y      | I   | Y   | Y   | P   | K   | T   | I   | L   | G   | V   | L   | I   | Q   | D       | T   | Q   | R   | K        | Y   | Q   | T   |  |  |
| Asia-2    | AB475097_M25CR_dog_JP_2009           | Y      | V   | Y   | Y   | P   | K   | T   | I   | L   | G   | V   | L   | I   | Q   | D       | T   | Q   | R   | K        | Y   | Q   | T   |  |  |
| Asia-1    | KC427278_Hebei_mink_CN_2008          | Y      | I   | Y   | Y   | P   | K   | T   | V   | L   | G   | V   | L   | I   | Q   | D       | T   | H   | R   | K        | Y   | Q   | T   |  |  |
|           | MK431532_NTU_dog_TW_2005             | Y      | I   | Y   | Y   | P   | K   | T   | V   | L   | G   | V   | L   | I   | Q   | D       | T   | Q   | R   | K        | Y   | Q   | T   |  |  |
|           | MH496776_5_dog_TH_2014               | Y      | I   | Y   | Y   | P   | K   | T   | V   | L   | G   | V   | L   | I   | Q   | D       | T   | H   | R   | K        | Y   | Q   | T   |  |  |
|           | MF041963_CDV06_wolf_ET_2016          | Y      | I   | Y   | Y   | P   | K   | T   | V   | L   | G   | V   | L   | I   | Q   | D       | T   | H   | R   | K        | Y   | Q   | T   |  |  |
|           | KP765764_LN1_fox_CN_2010             | Y      | I   | Y   | Y   | P   | K   | T   | V   | L   | G   | V   | L   | I   | Q   | D       | T   | Q   | R   | K        | Y   | Q   | T   |  |  |
|           | KP769803_Shaanxi_panda_CN_2015       | Y      | I   | Y   | Y   | P   | K   | T   | V   | L   | G   | V   | L   | I   | Q   | D       | T   | Q   | R   | K        | Y   | Q   | T   |  |  |
|           | KP738610_SD11_raccoondog_CN_2014     | Y      | I   | Y   | Y   | P   | K   | T   | V   | L   | G   | V   | L   | I   | Q   | D       | T   | Q   | R   | K        | Y   | Q   | T   |  |  |
|           | HM852904_MKYKM08_macaque_CN_2008     | Y      | I   | Y   | Y   | P   | K   | T   | V   | L   | G   | V   | L   | I   | Q   | D       | T   | Q   | R   | K        | Y   | Q   | T   |  |  |
| Africa-2  | LC342298_RC13_raccoon_JP_2016        | Y      | I   | Y   | Y   | P   | K   | T   | V   | L   | G   | V   | L   | I   | Q   | D       | T   | Q   | R   | K        | Y   | Q   | T   |  |  |
|           | KY971532_WT02_hyena_SA_2017          | Y      | V   | Y   | Y   | P   | K   | T   | I   | L   | G   | V   | L   | I   | Q   | D       | T   | Q   | R   | K        | Y   | Q   | T   |  |  |

Sites are based on MV-H interaction with human nectin-4 (Zhang et al 2013)