|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Protein name (gene name)** | **Mouse Model** | **Tissue expression** | **Lethality** | **Target TF** | **Key features of the phenotype** | **References** |
| **NCOR1** |
| NCoR1 | Knockout | Global | Yes | RAR, T3R | * Embryonic lethality at E 15.5, and developmental defects
 | (19) |
| NCoR1δRID | Knockin (deletion of RID domains) | Global | No | TR | * Improved insulin resistance and energy expenditure
 | (52, 135, 136) |
| NCoR1 DADm | Y478A Knockin | Global | No | PGC-1α, TR, LXR | * Abnormal circadian behavior
* Improved insulin-sensitivity, and diet-resistant
* weight gain
 | (52) |
| NCoR1δRID | Knockin | Liver | No | TR | * Increased expression of TR
* Improved cholesterol tolerance.
 | (72, 137) |
| NCoR1 | Knockout | Liver | No | LXR, RevErb | * Hepatosteatosis due to increased expression of lipogenesis
 | (12) |
| NCoR1 | Knockout | Skeletal muscle | No | MEF2, PPARβ/δ, and ERRs | * Increased exercise endurance
* Induction of oxidative metabolism
 | (86) |
| NCoR1 | Knockout | Adipo-cre | No | - | * Increased insulin sensitivity
* Decreased inflammatory response
* Smaller adipocytes
 | (46) |
| NCoR1 | Knockout | Heart | No | MEF2A, MEF2D | * Hypertrophy
 | (91) |
| NCoR1 | Knockout | Macrop-hages | No | CD36, PPARγ | * Activation of pro-inflammatory cytokines
 | (127) |
| NCoR1 DADm | Y478A Knockin | Global | No | PGC-1α | * Abnormal circadian behavior
* Diet-resistant weight gain
 | (52) |
| **NCoR2** |
| NCoR2 | Knockout | Global | Yes | JMJD3, RAR | * Embryonic lethality at E16.5, lethal heart defect
* Impairment of forebrain development
 | (138) |
| NCoR2 mRID | Knockin | Global | No | TR, PPARγ | * Metabolic defects (insulin resistance, increased adiposity, reduced energy expenditure)
 | (139) |
| NCoR2 mRID1 | Knockin | Global | No | PPARγ, LXRα | * Lipid accumulation in white and brown adipose tissue
* Metabolic dysfunctions
 | (53) |
| **HDAC3** |
| HDAC3 | Knockout | Global | Yes | H3S10 phosphorylation, DNA damage | * Embryonic lethality due to developmental defects
 | (27) |
| HDAC3 | Knockout | Adipo-cre | No |  Pparγ  and Ucp1 | * Increase of thermogenesis, browning of white adipose tissue
 | (25) |
| HDAC3 | Knockout | Liver /White adipocytes | No | NCoR, PGC-1α, PPARα/γ, REV-ERBa | * Increase of lipogenesis
* Decrease fatty acid oxidation
 | (12, 25, 30) |
| HDAC3 | Knockout | Brown adipocytes | No | UCP1, PGC-1α, OXPHOS | * Decrease of thermogenesis, weight loss, hypoglycemia
 | (49) |
| HDAC3 | Knockout | Heart and skeletal muscle | Upon high fat diet | - | * Lipid accumulation
* Severe hypertrophic cardiomyopathy
 | (90) |
| HDAC3 | Knockout | Heart | No | - | * Hypertrophic cardiomyopathy and diet induced lethality
 | (90) |
| HDAC3 | Knockout | Liver | No | PPARγ | * Hepatosteatosis
* Insulin resistance
* High TGs and cholesterol
 | (65) |
| HDAC3 | Knockout | Skeletal muscle | No | AMPD3  | * Gucose intolerance
* Muscle insulin resistance
* Enhanced exercise capacity
 | (87) |

TF: Transcription factors