

TRANSCHROMOSOMIC RAT WITH HUMAN CHROMOSOME 21

In recent years, researchers have developed a mouse model with an extra-human chromosome 21. The aim was to study the biochemical, developmental, and behavioral consequences of this trisomy, in order to extrapolate the results to humans. This model, however, had limitations. For example, just as in somatic cell hybrids, mice tend to lose human chromosomes, thus creating mosaicism. A paper in press, in the [Am. J. Hum. Genet.](https://www.cell.com/ajhg/fulltext/S0002-9297(21)00470-5)¹ now reports the creation of a transchromosomic rat model with human chromosome 21. TcHSA21, the transchromosomic rat, recapitulates the well-characterized brain defects of Down syndrome (DS) patients, including a smaller brain volume and a reduced cerebellar size. The authors are confident that the model will facilitate basic DS research with respect, in particular, to drug development.

¹ [https://www.cell.com/ajhg/fulltext/S0002-9297\(21\)00470-5](https://www.cell.com/ajhg/fulltext/S0002-9297(21)00470-5)