

# Growth hormone receptor

**Growth hormone receptor** is a **protein** that in humans is encoded by the GHR gene.

GHR orthologs have been identified in most mammals.

This gene encodes a protein that is a transmembrane receptor for growth hormone.

Binding of growth hormone to the receptor leads to reorientation of a pre-assembled receptor dimer dimerization (the receptor may however also exist as monomers on the cell surface and the activation of an intra- and intercellular signal transduction pathway leading to growth.

A common alternate allele of this gene, called GHRd3, lacks exon three and has been well characterized. Mutations in this gene have been associated with Laron syndrome, also known as the growth hormone insensitivity syndrome (GHIS), a disorder characterized by short stature (proportional dwarfism). Other splice variants, including one encoding a soluble form of the protein (GHRtr), have been observed but have not been thoroughly characterized.

Laron mice (that is mice genetically engineered to carry defective Ghr), have a dramatic reduction in body mass (only reaching 50% of the weight of normal siblings), and also show a ~40% increase in lifespan.

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Last update: **2024/06/07 02:50**

