

# Cytoplasmic and nuclear STAT3 in GH-stimulated fibroblasts of children with idiopathic short stature

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**Background:** STAT5, which plays an important role in GH signal transduction, has been studied extensively in children with growth retardation, but there is scarce information regarding STAT3.

**Aim:** We determined total and phosphorylated STAT3 after GH stimulation in fibroblasts from children with idiopathic short stature (ISS) and control children with normal stature. **Subjects and**

**Methods:** We studied 15 prepubertal children (age  $7.6 \pm 0.4$  years) with short stature (height  $-2.8 \pm 0.2$  SDS), decreased growth velocity ( $<p10$ ), a GH response of  $>10$  ng/ml to the clonidine stimulation test and decreased serum IGF-I concentrations ( $<-1$  SDS), and 19 control children with normal stature (age  $6.7 \pm 0.3$  years). We determined the levels of total and phosphorylated STAT3 in the cytoplasmic and nuclear fractions of fibroblast cultures obtained from a skin biopsy, stimulated with GH (200 ng/ml) for 15-60 min. **Results:** We observed a reduction in nuclear pSTAT3 levels and a lower nuclear/cytoplasmic STAT3