# Golgin, RAB6-Interacting

## Alternative Names
GORAB
SCYL1-Binding Protein 1
SCYL1BP1
NTKL-Binding Protein 1
NTKLBP1

## Record Category
Gene locus

## WHO-ICD
N.B.: Classification not applicable to gene loci.

## Incidence per 100,000 Live Births
N/A to gene loci

## OMIM Number
607983

## Mode of Inheritance
N/A

## Gene Map Locus
1q24.2

## Description
The GORAB gene provides instructions for making a member of the golgin family that localizes to the Golgi complex and the cytoplasm. The golgin family consists of a group of coiled-coil proteins that play different roles in Golgi-related transport processes. The GORAB protein interacts with the GTP-bound form of the small Ras-like GTPase RAB6. It has also been shown to interact with the SCYL1, MDM2, and PIRH2 protein. Studies in mice models have shown that the protein plays a major role in hair follicle morphogenesis by modulating follicular keratinocyte differentiation via the hedgehog signaling pathway. It has also been speculated to play a role in the secretory pathway and in mitosis by interacting with the N-terminal kinase-like protein.

Defects in this protein have been associated with Geroderma Osteodysplastica, a disorder characterized by wrinkled skin, lax, joint laxity and a prematurely aged face appearance.

## Molecular Genetics

The GORAB gene was mapped to the long arm of chromosome 1 (1q24.2), it has five coding exons spanning approximately 22 kb within the genomic DNA. GORAB has alternatively spliced transcript variants. It encodes a protein of 394 amino acids with a molecular mass of 45 kDa. GORAB is predicted to have two coiled-coil domains. A highly conserved region between amino acid residues 99 and 277 within the protein binds both Rab6 and Arf5. This region has been given the name Golgi-targeting Rab6 and Arf5 binding domain (IGRAB) domain. Most mutations leading to Geroderma Osteodysplasticum are clustered within this domain.

## Epidemiology in the Arab World

### Saudi Arabia
Al-Dosari and Alkuraya (2009) described four unrelated Saudi families each with at least one individual affected with geroderma osteodysplastica, with a total of seven patients. All parents were first cousins. Performing homozygosity mapping and linkage analysis, two mutations in the GORAB gene were identified. A homozygous 1-bp insertion in exon 2 (c.226_227insA), resulting in a frameshift and premature truncated protein (p.Q76QfsX20), was identified in three of the affected families. In addition, a novel homozygous missense mutation (c.658G>C), resulted in an amino acid substitution (p.A220P) was identified in one family. The Alanine residue at position 220 is positioned in an alpha-helix between the two coiled coil domains. Substititing this from Proline was expected to introduce a kink in the structure, disrupting the functionality of the protein.

## References
Al-Dosari M, Alkuraya FS. A novel missense mutation in SCYL1BP1 produces geroderma

osteodysplastica phenotype indistinguishable from that caused by nullimorphic mutations. Am J Med Genet A. 2009; 149A(10):2093-8. PMID: 19681135

## Related CTGA Records

Geroderma Osteodysplasticum

## External Links

https://ghr.nlm.nih.gov/gene/GORAB
http://www.genecards.org/cgi-bin/carddisp.pl?gene=GORAB

## Contributors

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