



Protein to treat growth disorders and bone density.

Recombinant therapy to restore IGF-1 bioavailability and bone architecture.



Medical Necessity

Growth disorders due to mutations in the *PAPPA2* gene limit the tissue bioavailability of free IGF-1 factor.

Patients suffer from postnatal growth retardation, short Dauber-Argente stature (SSDA) and alteration of bone mineralization.

Current therapies fail to fully restore bone quality and skeletal microarchitecture.

Opportunity

Prevalence



Paediatric patients carrying homozygous or missense mutations in the *PAPPA2* gene.
<1 / 1,000,000 inhabitants

Market



Global Market:
Valuing at USD 8,500 – 9,000 million in 2026.
Pediatric Segment:
Accounts for about 60% of the total market

Another fact

Growth hormone or recombinant IGF-1, with limited efficacy in restoring bone quality and density.

Technology

Administration of the recombinant human protein rhPAPPA2 to cleave the binding proteins IGFBP-3 and IGFBP-5.

It selectively increases the local release and bioactivity of free IGF-1 in skeletal target tissues.

It modulates bone remodeling by stimulating matrix formation and regulating the endocannabinoid system in bone.

Results

It significantly increased markers of bone formation (osteocalcin and collagen I) in in vivo models.

It decreased markers of resorption (osteopontin) and elevated expression of cannabinoid receptors (Cnr1, Cnr2, Gpr55).

It reversed compositional alterations, increasing amorphous calcium phosphate and restoring matrix mineralization.

Roadmap

IBIMA BIONAND platform is looking for a partner to further develop the technology through a co-development or licensing agreement.



Patent: Priority national patent application. P202531227. 12/22/2025



Team: Neuropsychopharmacology research group of IBIMA BIONAND Platform