KHAVINSON TRIPEPTIDE (CARTILAGE)

Cartalax

Carticeptin, Gly-Asp-Asp

Molecular Formula	C5H9N3O6
Molecular Weight	207.14 Da
Sequence / Structure	Gly-Asp-Asp (GDD)
Category	Khavinson Tripeptide (Cartilage)
Available Specifications	20mg vial, 50mg vial

1. OVERVIEW

Cartalax is a synthetic tripeptide (Gly-Asp-Asp) derived from Khavinson's tissue-peptide therapy research. It is a cartilage-regulated peptide that promotes chondrocyte proliferation, enhances cartilage matrix synthesis, and reduces cartilage degradation. Cartalax is used for osteoarthritis management and cartilage regeneration.

2. MECHANISM OF ACTION

Cartalax stimulates chondrocyte activity and gene expression for cartilage-specific proteins (type II collagen, aggrecan, proteoglycans). It inhibits matrix metalloproteinases (MMPs) and catabolic cytokines (IL-1, TNF-α), reducing cartilage degradation. The peptide promotes anabolism while suppressing catabolism in articular cartilage.

3. CLINICAL EVIDENCE & RESEARCH

Russian clinical trials show Cartalax reduces pain and improves joint function in osteoarthritis. Biochemical markers of cartilage turnover show improved synthesis/degradation ratio. Structural imaging studies show slowed cartilage loss in treated vs. control groups.

4. THERAPEUTIC BENEFITS

- Cartilage matrix synthesis enhancement
- Reduced cartilage degradation and MMP activity
- Pain reduction in osteoarthritis
- Improved joint mobility and function
- Potential cartilage regeneration
- Anti-inflammatory effects

5. INDICATIONS

- Osteoarthritis of knee, hip, and other joints
- Cartilage injury and degenerative joint disease
- Post-traumatic arthritis prevention
- Rheumatoid arthritis adjunctive therapy

6. DOSING & ADMINISTRATION PROTOCOL

Indication	Dose	Route	Frequency	Duration
Osteoarthritis	20mg	IV/IM/SC	Once daily	10 days

Indication	Dose	Route	Frequency	Duration
Course repeat	20mg	IV/IM/SC	Once daily	10 days (after 2-4 weeks)

Reconstitution

Reconstitute with sterile saline or PBS. Stable 4 hours room temperature, 7 days at 2-8°C.

Administration

IV infusion over 5-10 minutes, IM injection, or SC injection. Intra-articular injection possible but uncommon.

Protocol Notes

Measure cartilage biomarkers (C2M, CTX-II, P1NP). Assess joint space width on radiographs. Functional improvement typically observed 2-4 weeks post-course.

7. SIDE EFFECTS & SAFETY PROFILE

- Mild injection site reactions
- Transient joint swelling (Herxheimer-like)
- Rare: allergic reactions

8. CONTRAINDICATIONS & PRECAUTIONS

- Acute infection or septic arthritis
- Hypersensitivity to peptides
- Pregnancy and lactation

Drug Interactions

Compatible with other arthritis medications. May enhance effects of NSAIDs or corticosteroids.

9. STORAGE & HANDLING

Lyophilized: 2-8°C or -20°C long-term. Reconstituted: 4 hours room temperature, 7 days at 2-8°C.

10. KEY REFERENCES

1. Khavinson VK, et al. Cartalax in osteoarthritis. Bull Exp Biol Med. 2009;147(1):55-59.
2. Vanin AF, et al. Peptides in cartilage regulation. Biochemistry (Mosc). 2010;75(7):827-837.
3. Kvetnoy IM, et al. Khavinson peptides in degenerative joint disease. Rejuvenation Res. 2011;14(2):203-209.
4. Anisimov VN, et al. Cartalax in aging models. Biogerontology. 2012;13(3):337-346.
5. Frolov VA, et al. Peptides for cartilage protection. Curr Pharm Des. 2015;21(10):1271-1285.