

# Certificate of Analysis

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**Product Name:** AD 01  
CAS Number: 959961-23-0

**Catalog No.:** 6840 **Batch No.:** 1

## 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>115</sub>H<sub>187</sub>N<sub>33</sub>O<sub>42</sub>  
**Batch Molecular Weight:** 2703.94  
**Physical Appearance:** White lyophilised solid  
**Net Peptide Content:** 82%  
**Counter Ion:** TFA  
**Solubility:** Soluble to 1 mg/ml in water  
**Storage:** Store at -20°C  
**Peptide Sequence:** Gln-Ile-Arg-Gln-Gln-Pro-Arg-Asp-Pro-Pro-Thr-Glu-Thr-Leu-Glu-Leu-Glu-Val-Ser-Pro-Asp-Pro-Ala-Ser

## 2. ANALYTICAL DATA

**HPLC:** Shows 92.6% purity  
**Mass Spectrum:** Consistent with structure

## 3. AMINO ACID ANALYSIS DATA

Amino Acid		Theoretical	Actual	Amino Acid		Theoretical	Actual
Ala	1.00	1.00	Lys				
Arg	2.00	2.13	Met				
Asx	2.00	2.00	Phe				
Cys			Pro	5.00	5.02		
Glx	6.00	5.99	Ser	2.00	2.02		
Gly			Thr	2.00	1.93		
His			Trp				
Ile	1.00	0.96	Tyr				
Leu	2.00	1.97	Val	1.00	0.99		

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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**Product Name:** AD 01

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**Batch No.:** 1

CAS Number: 959961-23-0

**Description:**

FKBPL (FK506-binding protein like)-based peptide. Binds to and upregulates expression of CD44. Inhibits breast cancer stem cell (BCSC) growth. Decreases pluripotency markers and promotes differentiation of BCSCs. Also inhibits endothelial cell migration as well as tubule and microvessel formation in vitro and in vivo. Blocks tumor in growth xenograft models.

**Physical and Chemical Properties:**

Batch Molecular Formula: C<sub>115</sub>H<sub>187</sub>N<sub>33</sub>O<sub>42</sub>

Batch Molecular Weight: 2703.94

Physical Appearance: White lyophilised solid

**Peptide Sequence:**

Gln-Ile-Arg-Gln-Gln-Pro-Arg-Asp-Pro-Pro-  
Thr-Glu-Thr-Leu-Glu-Leu-Glu-Val-Ser-Pro-  
Asp-Pro-Ala-Ser

**Storage:** Store at -20°C

**Solubility & Usage Info:**

Soluble to 1 mg/ml in water

This product is supplied as a lyophilized solid and may be very hard to visualize. Solutions should be made by adding solvent directly to the vial. The vial should then be vortexed vigorously to ensure the product has completely dissolved.

**Net Peptide Content:** 82% (Remaining weight made up of counterions and residual water).

**Counter Ion:** TFA

**Stability and Solubility Advice:**

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Peptides in solution are much less stable than in lyophilized form. This is especially true for peptides whose sequences contain amino acids such as Cys, Met, Trp, Asn, Gln, and N-terminal Glu.

Therefore we recommend storing peptides in solution for as short a time as possible. Avoid repeated freeze thaw cycles by dividing the peptide solution into aliquots and storing the aliquots at -20°C. Any portion of an aliquot unused after thawing should be discarded.

Peptides stored in solution can occasionally be susceptible to bacterial degradation. We recommend using sterile solutions or passing the peptide solution through a 0.2 µm filter to remove potential bacterial contamination whenever possible.

**References:**

**McClements *et al*** (2013) Targeting treatment-resistant breast cancer stem cells with FKBPL and its peptide derivative, AD-01, via the CD44 pathway. *Clin.Cancer Res.* **19** 3881. PMID: 23741069.

**Yakkundi *et al*** (2013) The anti-migratory effects of FKBPL and its peptide derivative, AD-01: regulation of CD44 and the cytoskeletal pathway. *PLoS One.* **8** e55075. PMID: 23457460.

**Valentine *et al*** (2011) FKBPL and peptide derivatives: novel biological agents that inhibit angiogenesis by a CD44-dependent mechanism. *Clin.Cancer Res* **17** 1044. PMID: 21364036.

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