

## Certificate of Analysis

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**Product Name:** RS 09

**Catalog No.:** 5928

**Batch No.:** 2

CAS Number: 1449566-36-2

### 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>31</sub>H<sub>49</sub>N<sub>9</sub>O<sub>9</sub>  
**Batch Molecular Weight:** 691.78  
**Physical Appearance:** White lyophilised solid  
**Net Peptide Content:** 69%  
**Counter Ion:** TFA  
**Solubility:** Soluble to 2 mg/ml in water  
**Storage:** Store at -20°C  
**Peptide Sequence:** Ala-Pro-Pro-His-Ala-Leu-Ser

### 2. ANALYTICAL DATA

**HPLC:** Shows 95.6% purity  
**Mass Spectrum:** Consistent with structure

### 3. AMINO ACID ANALYSIS DATA

Amino Acid		Theoretical	Actual	Amino Acid		Theoretical	Actual
Ala		2.00	2.09	Lys			
Arg				Met			
Asx				Phe			
Cys				Pro	2.00	2.03	
Glx				Ser	1.00	0.99	
Gly				Thr			
His	1.00		0.98	Trp			
Ile				Tyr			
Leu	1.00		1.00	Val			

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

**bio-techne.com**

info@bio-techne.com

techsupport@bio-techne.com

**North America**

Tel: (800) 343 7475

**China**

info.cn@bio-techne.com

Tel: +86 (21) 52380373

**Europe Middle East Africa**

Tel: +44 (0)1235 529449

**Rest of World**

[www.tocris.com/distributors](http://www.tocris.com/distributors)

Tel: +1 612 379 2956

**Product Name:** RS 09**Catalog No.:** 5928**Batch No.:** 2

CAS Number: 1449566-36-2

**Description:**

TLR4 agonist. Promotes NF- $\kappa$ B nuclear translocation and induces inflammatory cytokine secretion in RAW264.7 macrophages in vitro. Acts as an adjuvant in vivo; enhances X-15 specific antibody serum concentrations, when administered with X-15-KLH in mice.

**Physical and Chemical Properties:**Batch Molecular Formula: C<sub>31</sub>H<sub>49</sub>N<sub>9</sub>O<sub>9</sub>

Batch Molecular Weight: 691.78

Physical Appearance: White lyophilised solid

**Peptide Sequence:**

Ala-Pro-Pro-His-Ala-Leu-Ser

**Storage:** Store at -20°C**Solubility & Usage Info:**

Soluble to 2 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:** 69% (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  $\mu$ m filter to remove potential bacterial contamination whenever possible.

**References:**

Li *et al* (2016) Intranasal vaccination against HIV-1 with adenoviral vector-based nanocomplex using synthetic TLR-4 agonist peptide as adjuvant. *Mol.Pharm.* **13** 885. PMID: 26824411.

Shanmugam *et al* (2012) Synthetic Toll like receptor-4 (TLR-4) agonist peptides as a novel class of adjuvants. *PLoS One* **7** e30839. PMID: 22363498.

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