

Product Specification Sheet

Flg22 peptide (30-51 aa, Flic, *P. aeruginosa*),

- Cat #** FLG22-P-1 Flg22 peptide (30-51 aa, Flic, *P. aeruginosa*), pure **SIZE:** 1 mg
- Cat #** FLG22-P-5 Flg22 peptide (30-51 aa, Flic, *P. aeruginosa*), pure **SIZE:** 5 mg

Plants do not have an immune system analogous to vertebrates, but they nevertheless have the capacity to detect invasion by microbial pathogens and to respond with a broad set of defence responses. Molecules released or generated during microbial entry, so-called elicitors, are thought to act as the chemical cues that are perceived by the plant and activate defence, including early responses such as the oxidative burst.

Plants and animals mount defense responses upon recognition of numerous pathogen-derived molecules. These pathogen-associated molecular patterns (PAMPs) include bacterial cell wall components such as lipopolysaccharide. PAMPs are (1) highly conserved (2) present in different organisms and (3) usually play a pivotal role for the life of the microorganism. In mammals, the perception of PAMPs occurs through Toll-like receptors (TLRs). For instance, in mice, the innate immune response is activated through perception of the *Salmonella* flagellin by the TLR5 receptor. Several plant species, including *Arabidopsis*, have a specific recognition system for a conserved, 22-amino acid motif (flg22) of the bacterial flagellin. The *Arabidopsis* innate immune response to flg22 involves a host recognition protein complex that contains the FLS2 Leu rich repeat (LRR) receptor kinase. The flg22-FLS2 interaction leads to production of reactive oxygen species (ROS), medium alkalization, activation of mitogen-activated protein (MAP) kinases, and induction of pathogen-responsive genes.

Synthetic peptides comprising 15–22 amino acids of this domain acted as elicitors of defence responses at sub-nanomolar concentrations in cells of tomato and several other plant species. Peptides comprising only the central 8 to 11 amino acids of the active domain had no elicitor activity but acted as specific, competitive inhibitors in tomato cells. These antagonists suppressed the plant's response to flagellin, crude bacterial extracts and living bacterial cells. Thus, plants have a highly sensitive and selective perception system for the flagellin of motile eubacteria.

flg22 peptide has been shown to be an extremely potent elicitor of the alkalization response (EC₅₀ ~ 30 pM; refs 1-2). Removal of two or three amino acid residues (flg15-Δ2, flg15-Δ3) caused a three- and 10-fold loss in activity, respectively. Peptides lacking four or more residues at the C terminus (from flg15-Δ4 to flg15-Δ9) were completely inactive.

Source of Antigen and Antibodies

Cat #	<ul style="list-style-type: none"> • FLG22-P-1 • FLG22-P-5
Sequence	QRL STG SRI NSA KDD AAG LQI A, 22 aa
Location	30-51 aa (protein accession # Q83WT8) of flagellin
Purity	>90%; HPLC Purified
Mol. Wt.	2273.69
Form	Lyophilized Powder
Solubility	Soluble in DMF or water or buffers

Storage

Short-term: unopened, undiluted vials for less than a week at 4oC.

Long-term: at –20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at –20oC or below.

Shipping: 4oC for solutions and room temp for powder.

General References: (1) Melotto M (2006) Cell 126, 969-980; Navaaro L (2004) Plant Physiology 135, 1113-1128; Arora Sk (2004) J. Bacteriol. 186, 2115-2122; (2). Felix G (1999) Plant J. 18, 265-276

*This product is for in vitro research use only.

Related items

FLG22-P-1
FLG14-P-1 (flg22 deletion peptide)
E. coli and *Salmonella* LPS

FLG22-P-1 80402A

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