

Figure 2 consists of two panels, A and B, illustrating the structural analysis of the s1-saa-pep cluster.

Panel A shows a ribbon diagram of the protein structure. The protein is colored in various shades of green, yellow, and orange. The peptide cluster is highlighted in magenta. Key residues are labeled: Gly502, Tyr501, Thr500, Tyr505, Ser494, Glu493, Phe490, Thr476, Lys484, and Glu482. Distances are indicated by dashed lines: 2.77 Å between Gly502 and Tyr501, and 2.64 Å between Ser494 and Glu493.

Panel B shows a stick representation of the peptide cluster. The residues are labeled: Asp1, Gly502, Thr500, Tyr2, Gly3, Ala4, Val5, Tyr449, Asn6, Leu452, Phe490, Lys9, Glu482, Thr472, Lys484, Leu492, Glu493, Ser494, Tyr453, Gly496, Tyr501, and Tyr505. Distances are indicated by dashed lines: 2.77 Å between Gly502 and Tyr501, and 2.64 Å between Ser494 and Glu493. The caption below the panel reads "cluster3 1 s1-saa-pep".

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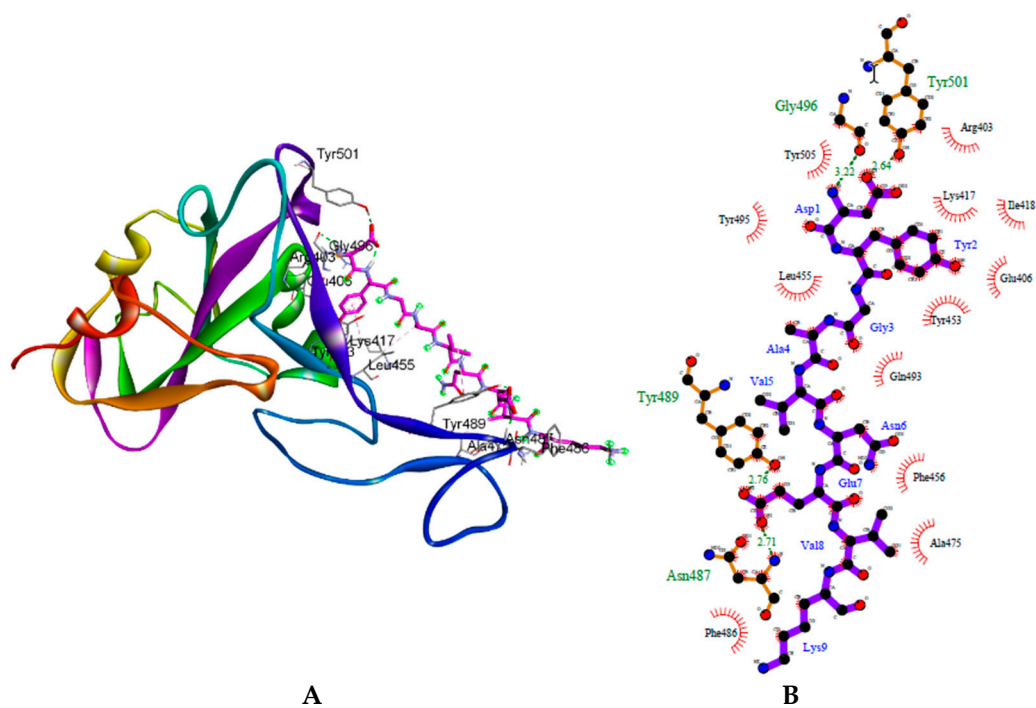


Figure S2. Sketch diagram depicting the 3D (A) and 2D (B) interaction between bromelain-derived peptide and RBD UK by LigPlot+. RBD UK contains the mutation N501Y.

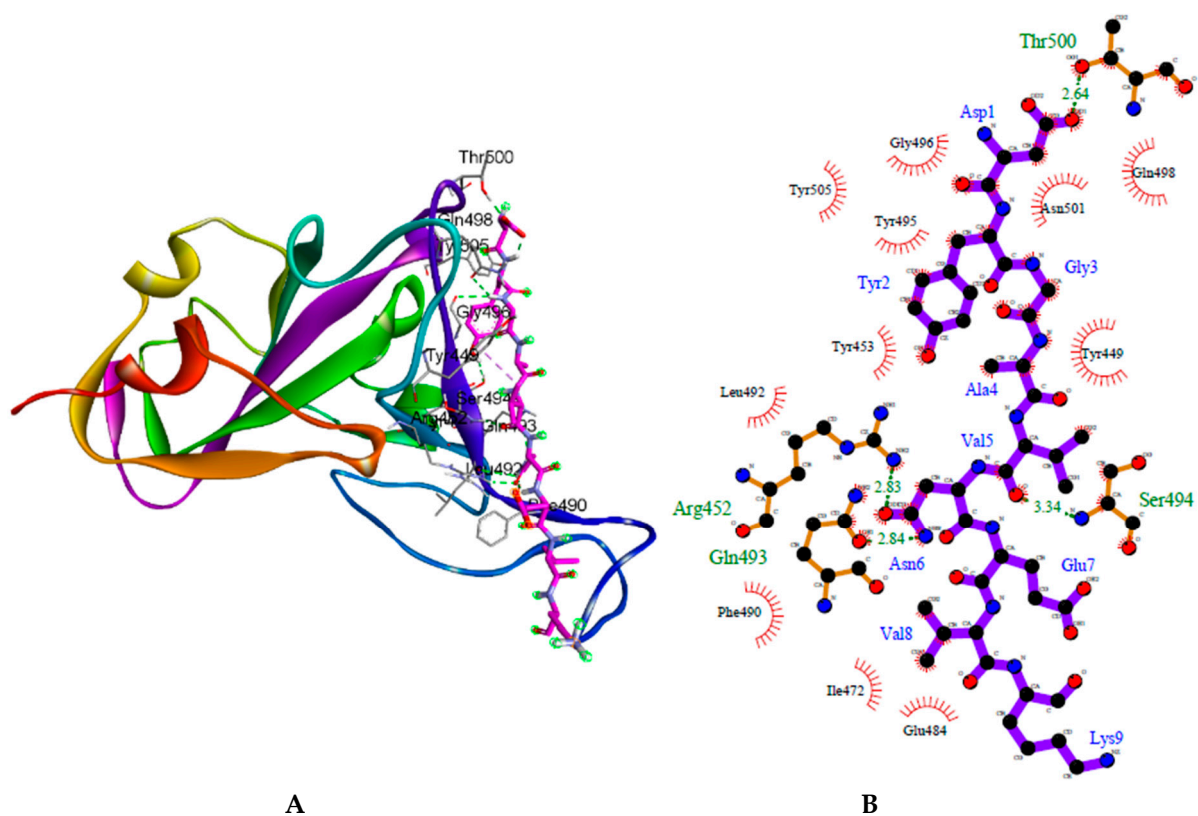


Figure S3. Sketch diagram depicting the 3D (A) and 2D (B) interaction between bromelain-derived peptide and RBD CA (US) by LigPlot+. RBD CA contains the mutation L452R.

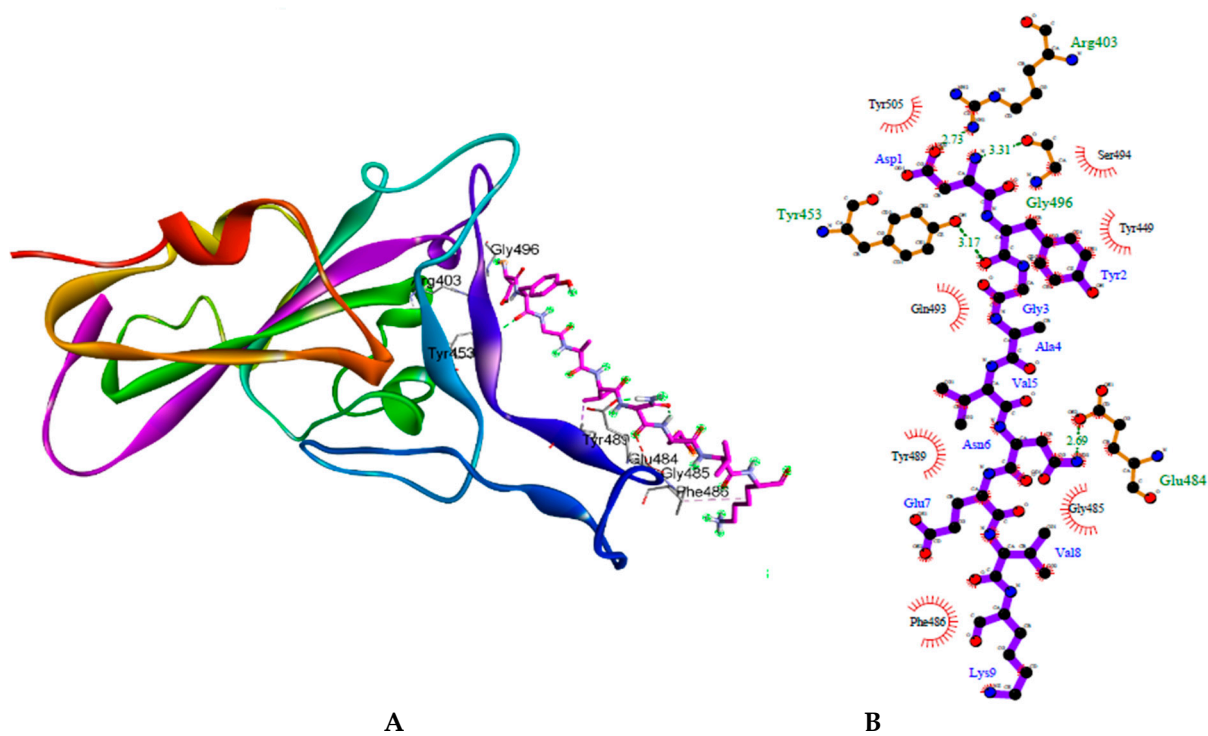


Figure S4. Sketch diagram depicting the 3D (A) and 2D (B) interaction between bromelain-derived peptide and RBD SG (NY1) by LigPlot+. RBD SG contains the mutation S477G.

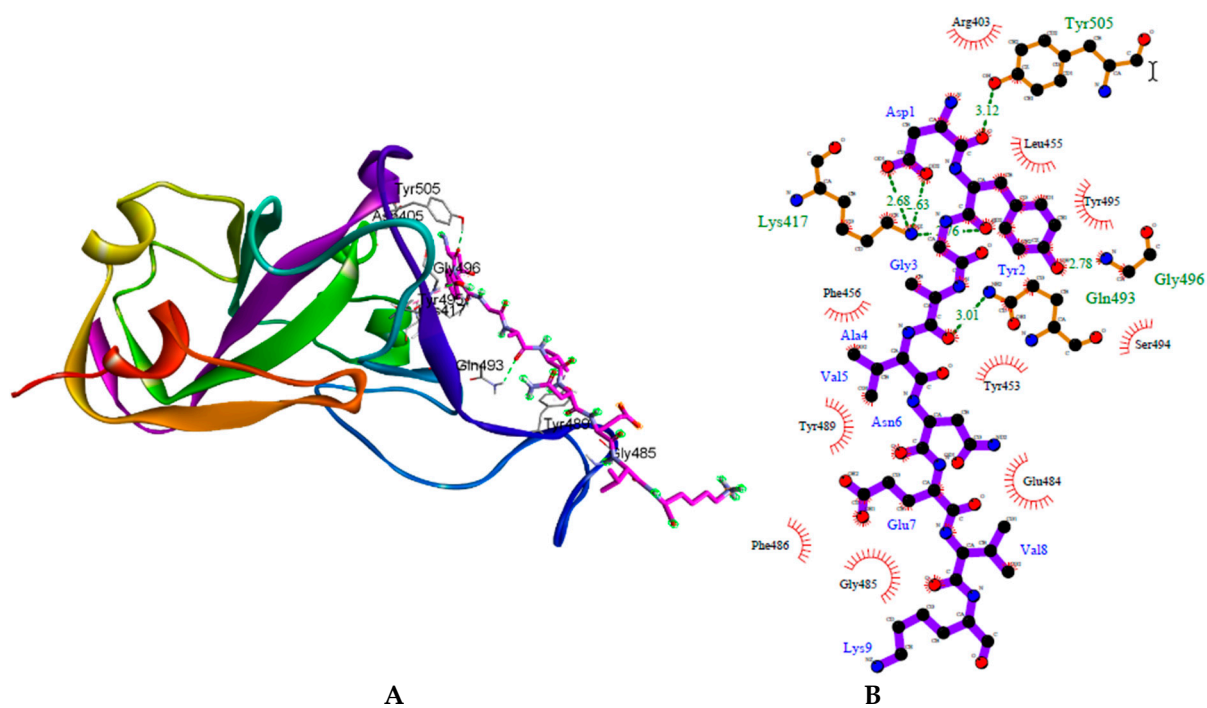


Figure S5. Sketch diagram depicting the 3D (A) and 2D (B) interaction between bromelain-derived peptide and RBD SN (NY2) by LigPlot+. RBD SN contains the mutation S477N.

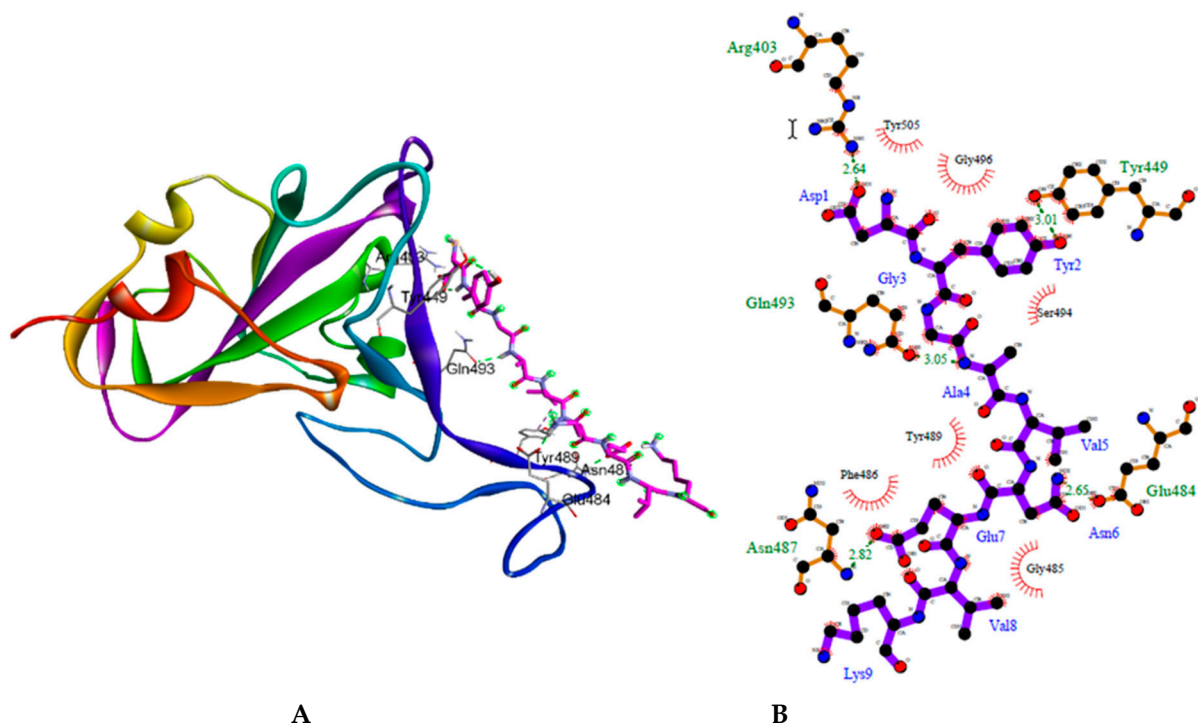


Figure S6. Sketch diagram depicting the 3D (A) and 2D (B) interaction between bromelain-derived peptide and RBD SC by LigPlot+. RBD SC contains the mutation N439K.

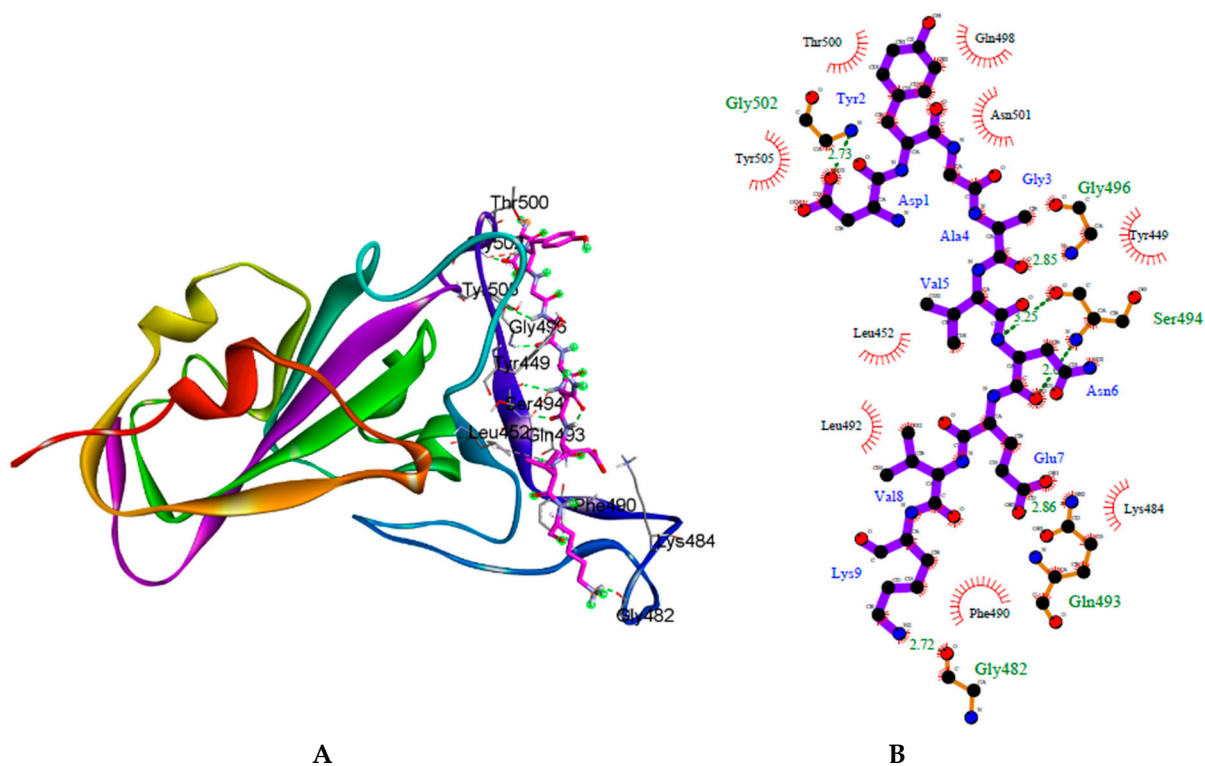


Figure S7. Sketch diagram depicting the 3D (A) and 2D (B) interaction between bromelain-derived peptide and RBD NG by LigPlot+. RBD NG contains the mutation E484K.

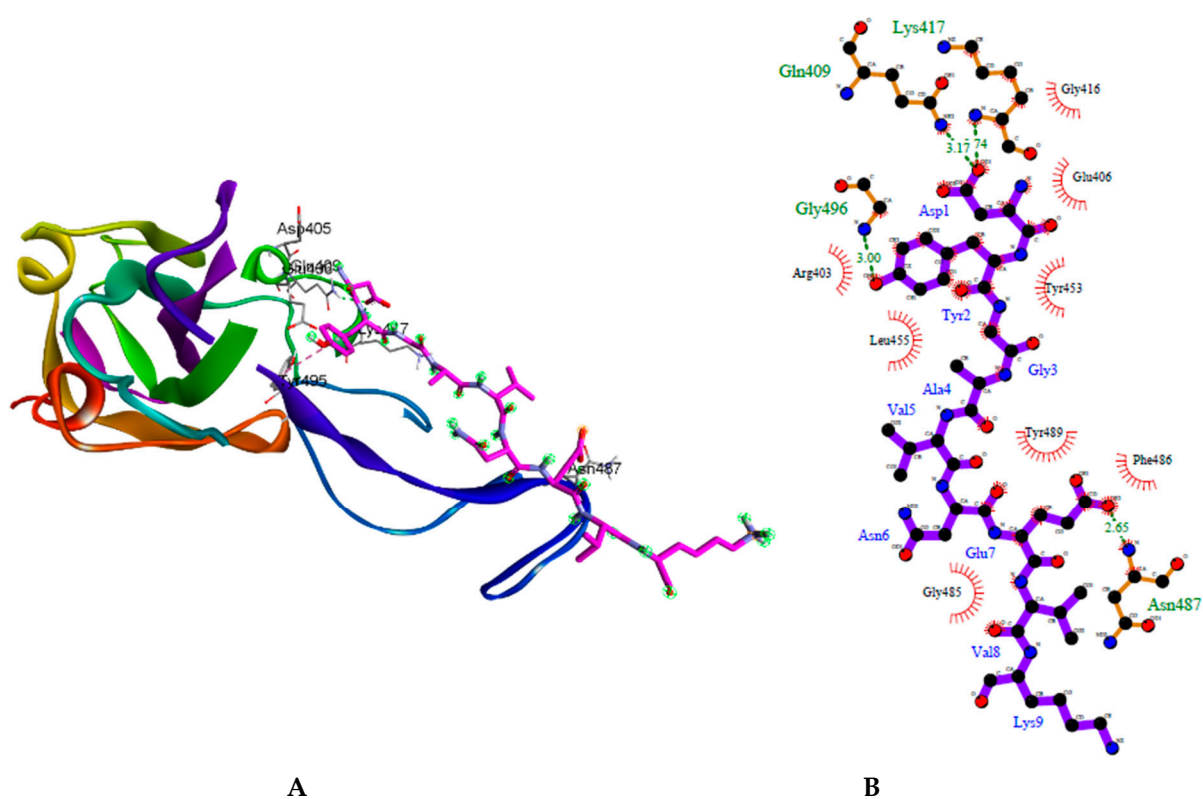


Figure S8. Sketch diagram depicting the 3D (A) and 2D (B) interaction between bromelain peptide and RBD IN by LigPlot+. RBD IN contains the mutations L452R and E484K.