

## Supplementary Information (SI)

### Design and Synthesis of Odorranalectin-Derived Peptides for RNA Binding

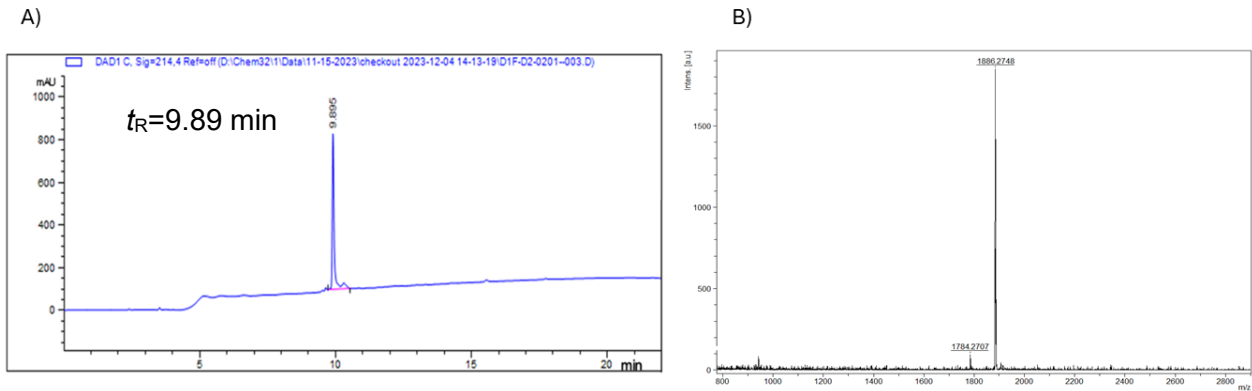
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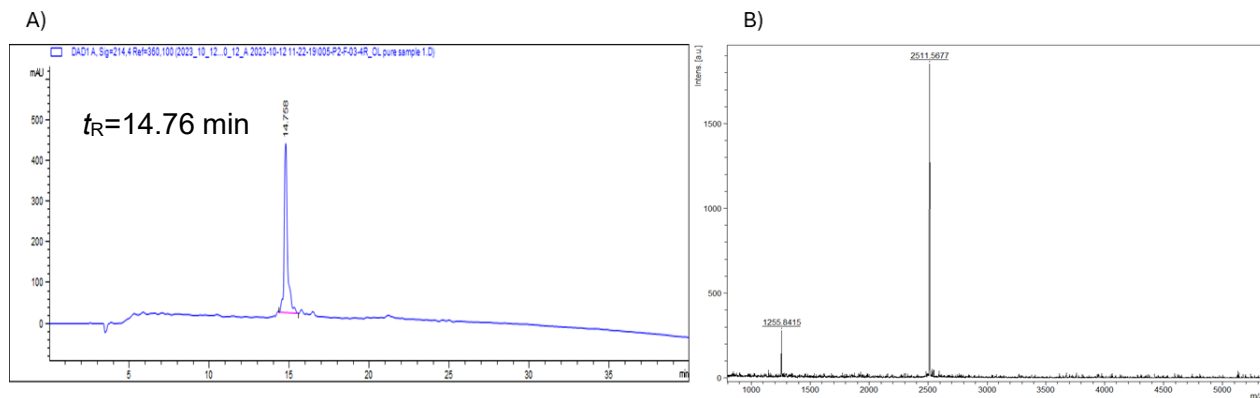
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Predrag Cudic, Department of Chemistry and Biochemistry, Florida Atlantic University, 777 Glades Road, Boca Raton, FL 33431, USA. E-mail: [pcudic@fau.edu](mailto:pcudic@fau.edu)

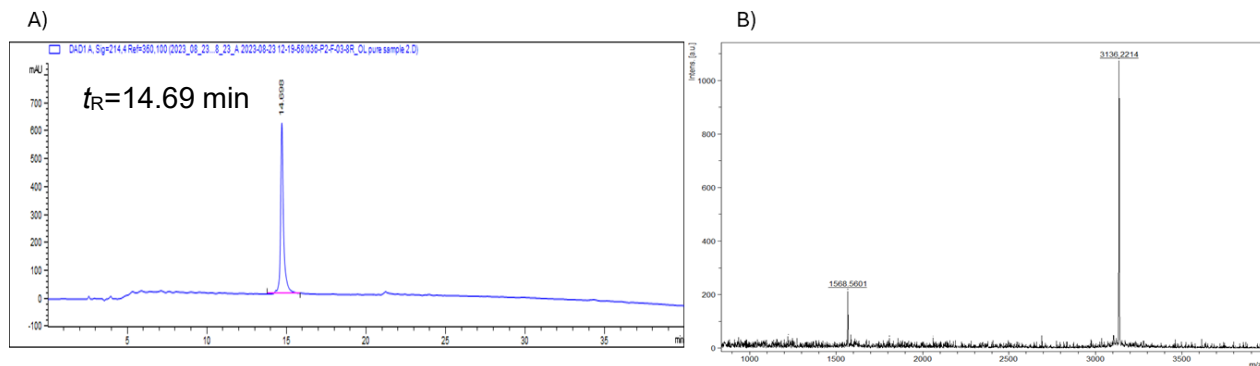
RP-HPLC analysis: C18 monomeric column (Grace Vydac, 250 × 4.6 mm, 5 mm, 120 Å), 1 ml/min flow rate, and elution method with a linear gradient of 2 → 100% B, where A is 0.1% TFA in H<sub>2</sub>O, and B is 0.08% TFA in CH<sub>3</sub>CN. All peptides were dissolved in water and water solutions were used for RP-HPLC analysis.



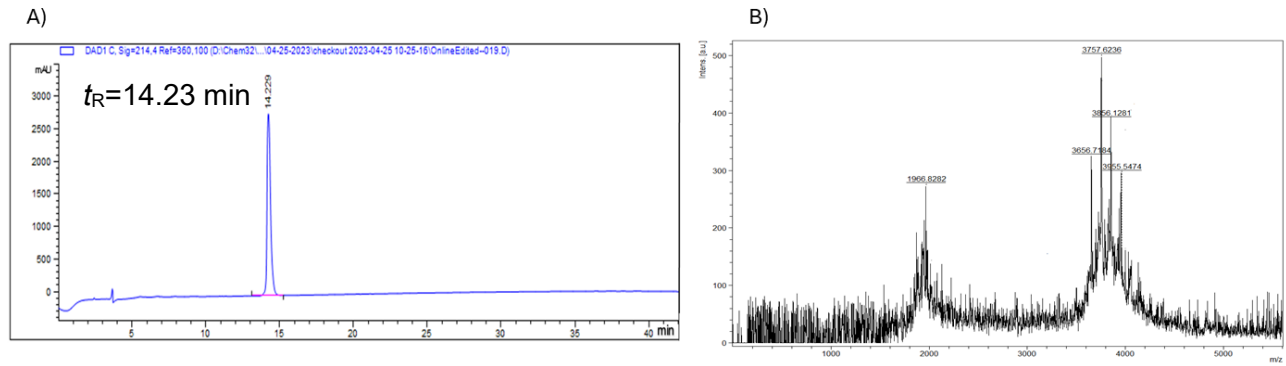
**Figure S1.** A) HPLC traces and B) MALDI ToF MS spectra of odorranalectin, YASPK-*cyclo*(CFRYPNGVLAC)T. The elution gradient was 2→ 98% B over 22 min. Expected  $[M+H]^+$  = 1887.2100 Da, observed  $[M+H]^+$  = 1886.2748 Da.



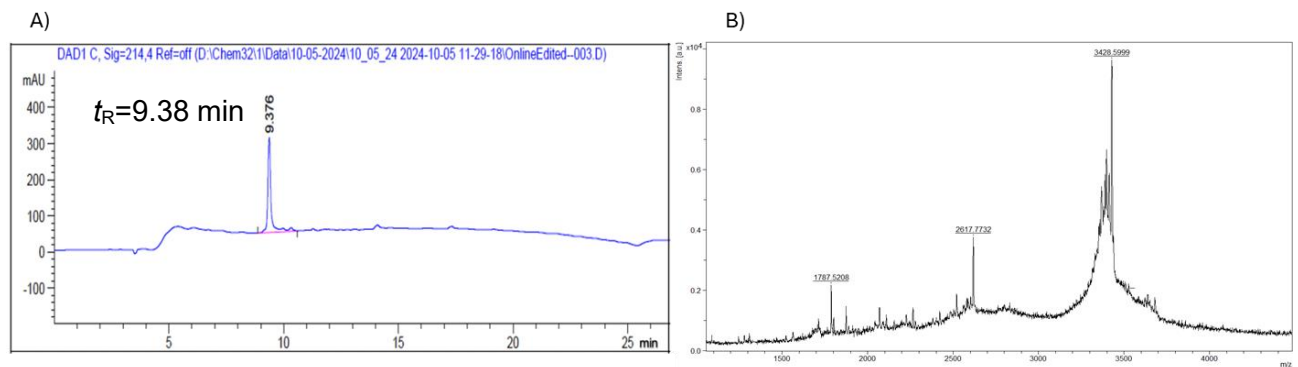
**Figure S2.** A) HPLC traces and B) MALDI ToF MS spectra of odorranalectin derivative, (R)<sub>4</sub>-YASPK-*cyclo*(CFRYPNGVLAC)T. The elution gradient was 2→ 98% B over 40 min. Expected  $[M+H]^+$  = 2511.9700 Da, observed  $[M+H]^+$  = 2511.5677 Da.



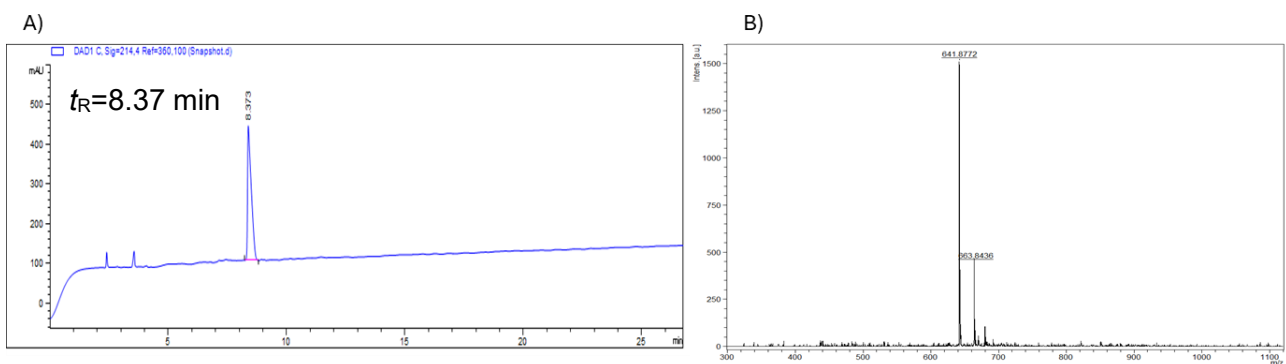
**Figure S3.** A) HPLC traces and B) MALDI ToF MS spectra of odorranalectin derivative, (R)<sub>8</sub>-YASPK-*cyclo*(CFRYPNGVLAC)T. The elution gradient was 2→ 98% B over 40 min. Expected  $[M+H]^+$  = 3136.7200Da, observed  $[M+H]^+$  = 3136.2214Da.



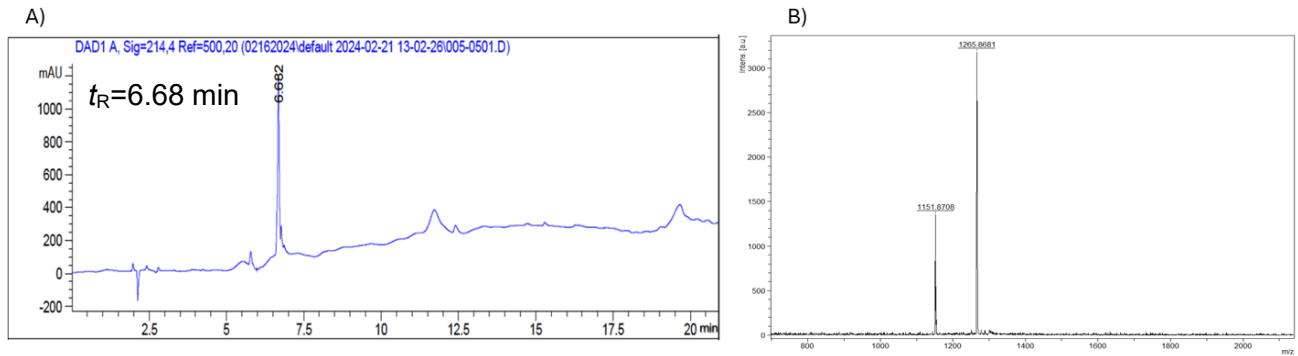
**Figure S4.** A) HPLC traces and B) MALDI ToF MS spectra of odorranalectin derivative, (R)<sub>12</sub>-YASPK-*cyclo*(CFRYPNGVLAC)T. The elution gradient was 2→ 98% B over 40 min. Expected [M+H]<sup>+</sup> = 3761.4800 Da. Calculated [M+H]<sup>+</sup> = 3757.6236 Da.



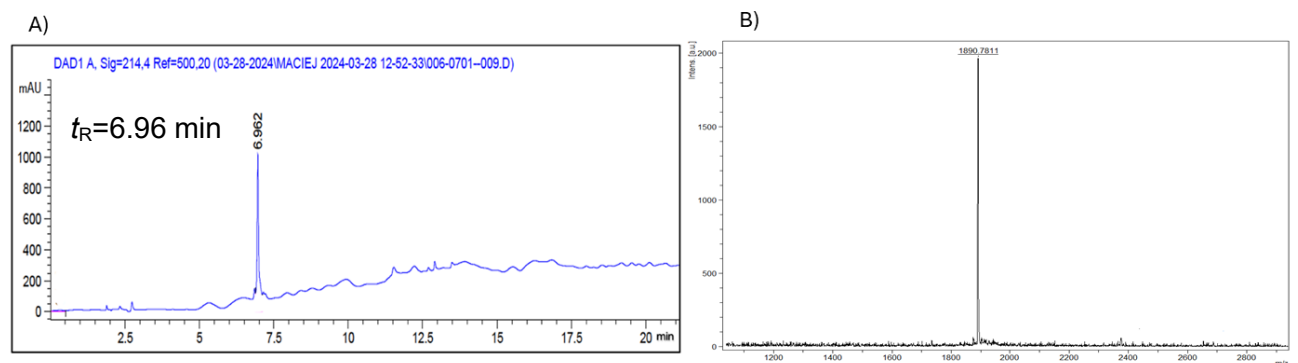
**Figure S5.** A) HPLC traces and B) MALDI ToF MS spectra of odorranalectin, TAT<sub>47-57</sub>-YASPK-*cyclo*(CFRYPNGVLAC)T. The elution gradient was 2→ 98% B over 25 min. Expected [M+H]<sup>+</sup> = 3761.4800 Da, observed [M+H]<sup>+</sup> = 3757.6236 Da.



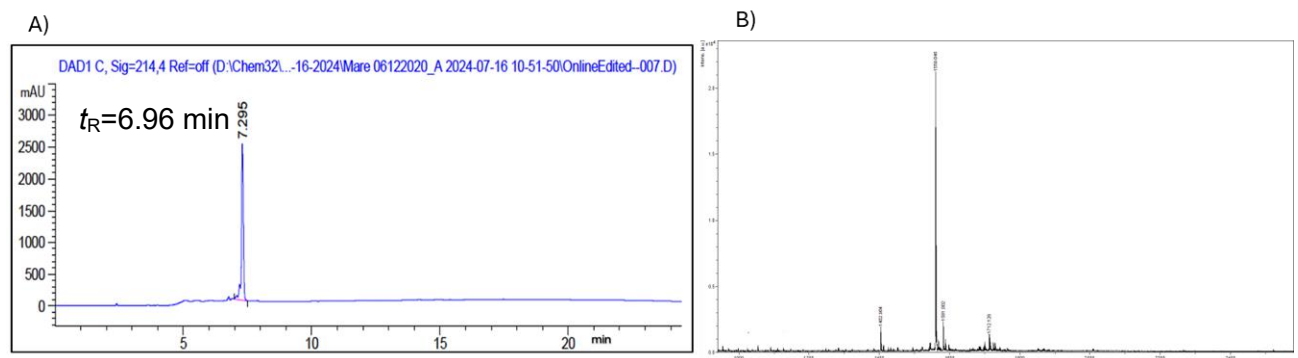
**Figure S6.** A) HPLC traces and B) MALDI ToF MS spectra of (R)<sub>4</sub> peptide. The elution gradient was 2→ 98% B over 25 min. Expected [M+H]<sup>+</sup> = 641.7900 Da, observed [M+H]<sup>+</sup> = 641.8772 Da.



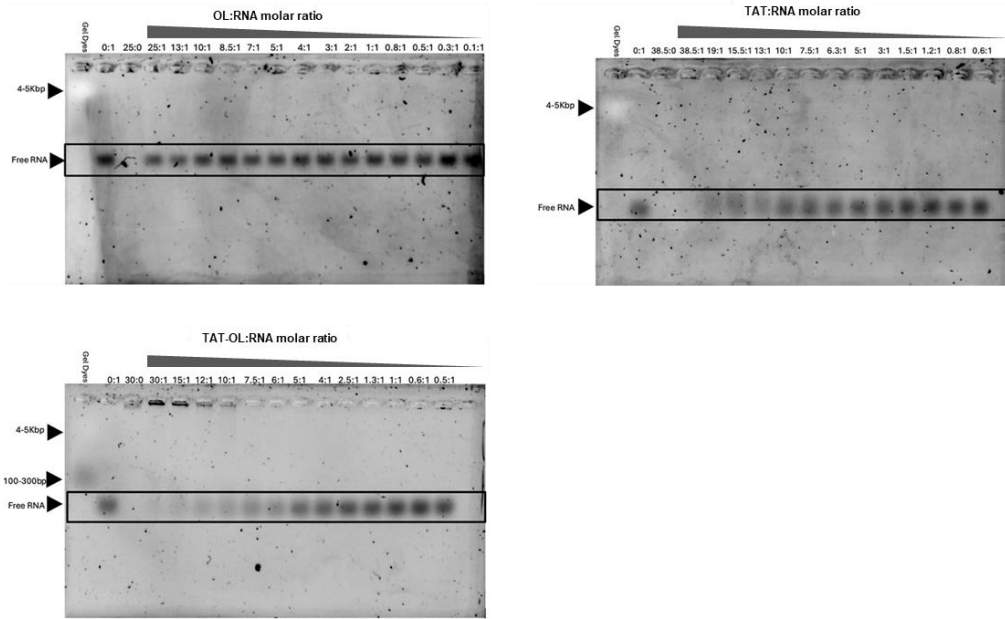
**Figure S7.** A) HPLC traces and B) MALDI ToF MS spectra of (R)<sub>8</sub> peptide. The elution gradient was 2→ 98% B over 20 min. Expected [M+H]<sup>+</sup> = 1266.5400 Da, observed [M+H]<sup>+</sup> = 1265.8681 Da.



**Figure S8.** A) HPLC traces and B) MALDI ToF MS spectra of (R)<sub>12</sub> peptide. The elution gradient was 2→ 98% B over 20 min. Expected [M+H]<sup>+</sup> = 1891.3000 Da, observed [M+H]<sup>+</sup> = 1890.7811 Da.



**Figure S9.** A) HPLC traces and B) MALDI ToF MS spectra of TAT<sub>47-57</sub> peptide, YGRKKRRQRRR. The elution gradient was 2→ 98% B over 25 min. Expected [M+H]<sup>+</sup> = 1558.8700 Da, observed [M+H]<sup>+</sup> = 1559.0460 Da.



**Figure S10.** Representative gel electrophoresis mobility shift assays (EMSA). The band intensity representing free RNA was quantified using ImageJ software.