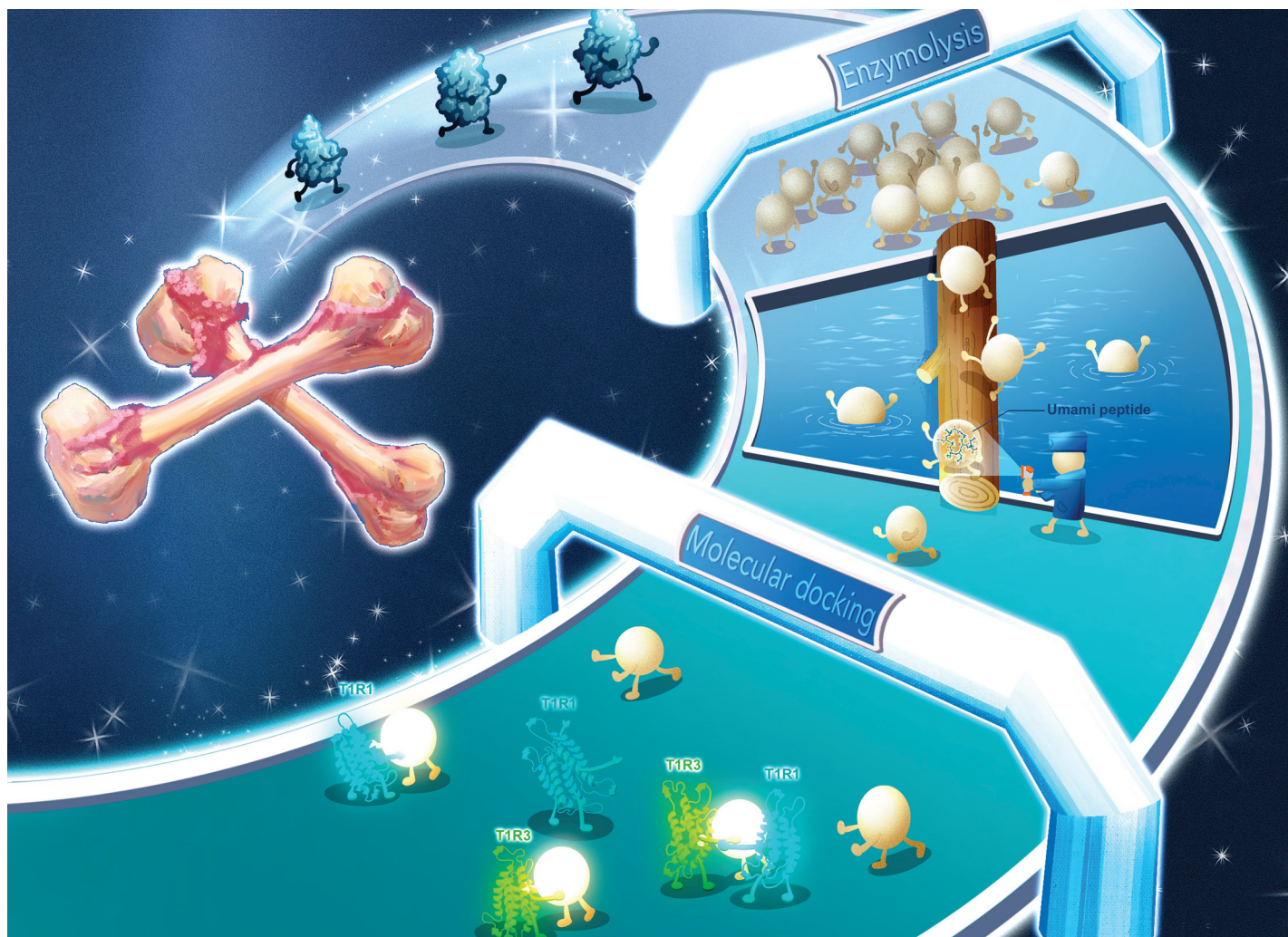


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Showcasing research from Professor Yuyu Zhang's laboratory, School of Food and Health, Beijing Technology and Business University, Beijing, China.

High-throughput discovery of umami peptides from pork bone and elucidation of their molecular mechanism for umami taste perception

Pork bone protein extracts were hydrolyzed using proteinase K and papain selected through computational proteolysis of pork type I collagen under the controlled conditions predicted by umami intensity-guided response surface analysis. Eight potential umami peptides were virtually screened, leading to the confirmation of six. Molecular docking revealed that hydrophilic amino acids in umami peptides predominantly formed hydrogen bonds with those of T1R1/T1R3. Specifically, residues Thr, Asn, Lys, Ser and Glu of peptides mainly interacted with Ser107/148/276 of T1R1, Tyr, Arg and Asp were crucial for binding to Ser104/146 and His145 of T1R3.

As featured in:



See Yuyu Zhang *et al.*, *Food Funct.*, 2024, 15, 9766.