Electronic Supplementary Information for RSC Advances

Supporting Information

Exploring the binding effects and inhibiting mechanism of hyperoside to lipase using multi-spectroscopic, isothermal titration calorimetry, inhibition kinetics and molecular dynamics

Zhen Zeng,[a] Di Wu,[a] * Lan Tang,[a] Xia Hu,[a] Jing Zhang,[a] Fang Geng,[a]

a. Meat Processing Key Laboratory of Sichuan Province, School of Food and Biologica l Engineering, Chengdu University, Chengdu 610106, China

*** Corresponding author:**

Dr. Di Wu, Email: diwulab@163.com, Address: Meat Processing Key Laboratory of Sichuan Province, School of Food and Biological Engineering, Chengdu University, Chengdu, China

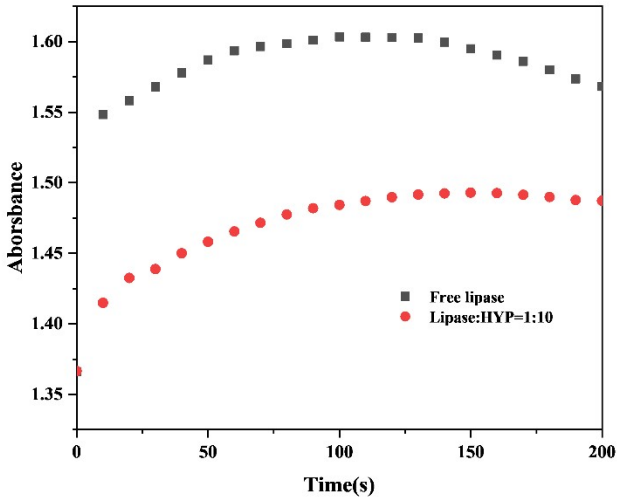

Fig. S1 Hydrolysis curve of pNPC with lipase (3.0×10^{-6} M) added with concentrations (molar ratio=1:10) of HYP.

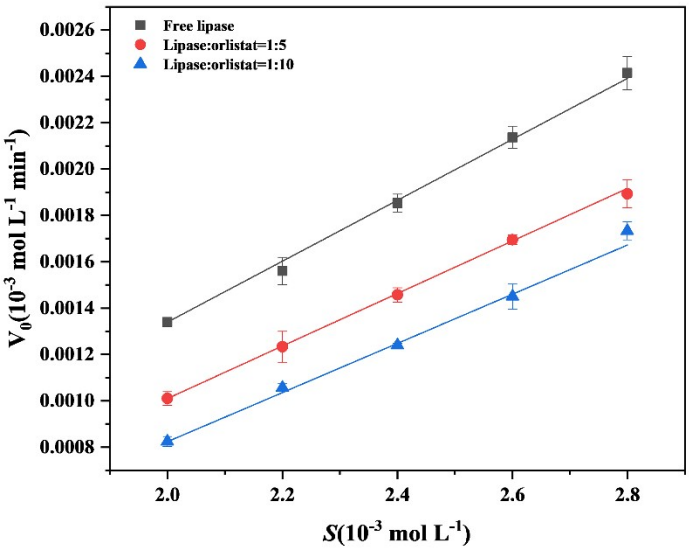

Fig. S2 The relationship between substrate and V_0 varying different orlistat concentrations.

Table.S1 Fluorescence lifetimes of lipase with different concentrations of HYP.

Sample	τ_1(ns)	τ_2(ns)	τ_3(ns)	α_1	α_2	α_3	τ(ns)	χ^2
Free lipase	1.415	0.077	3.247	0.493	0.112	0.395	1.989	1.118
lipase-HYP=1:2	1.459	0.087	3.118	0.502	0.123	0.375	1.912	1.174
lipase-HYP=1:4	1.423	0.090	3.042	0.497	0.128	0.375	1.860	1.144

Table.S2 Statistical analysis of the initial velocity (V_0) of HYP concentration and pNPC concentration.

Source	**Type III sum of squares**	**d*f***	**Mean square**	**F**	**Significance**
Corrected model	4.480E-006[a]	14	3.200E-007	208.221	.000
Intercept	2.608E-005	1	2.608E-005	16971.471	.000
HYP concentration	9.074E-007	2	4.537E-007	295.195	.000
pNPC concentration	3.412E-006	4	8.529E-007	554.978	.000
HYP*pNPC	1.610E-007	8	2.013E-008	13.099	.000
Error	4.611E-008	30	1.537E-009		
Total	3.061E-005	45			
Corrected	4.52E-006	44			