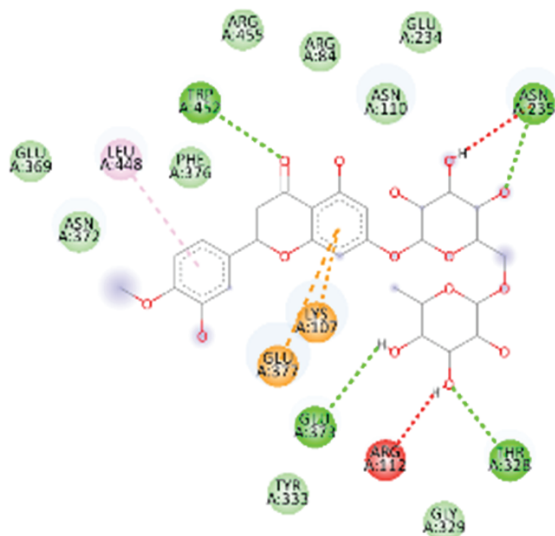
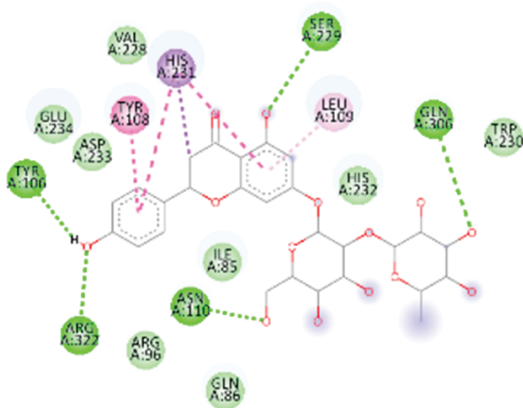
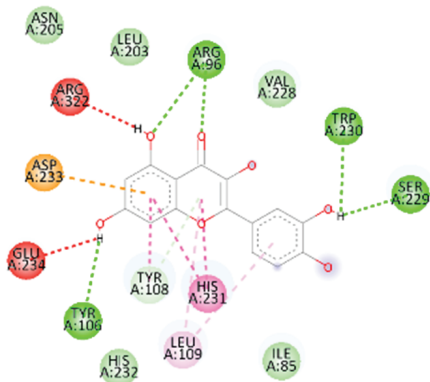


**Supplementary 1.**

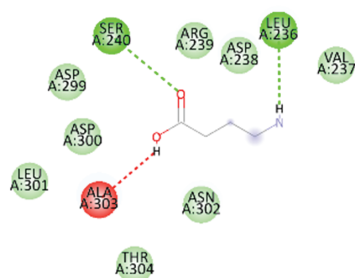
**The 2D diagram of hesperidin-FTO complex.** Light green: van der Waals; lime: conventional hydrogen bond; red: unfavorable donor-donor; orange: Pi-cation/anion; light pink: Pi-alkyl.

**Supplementary 2.**

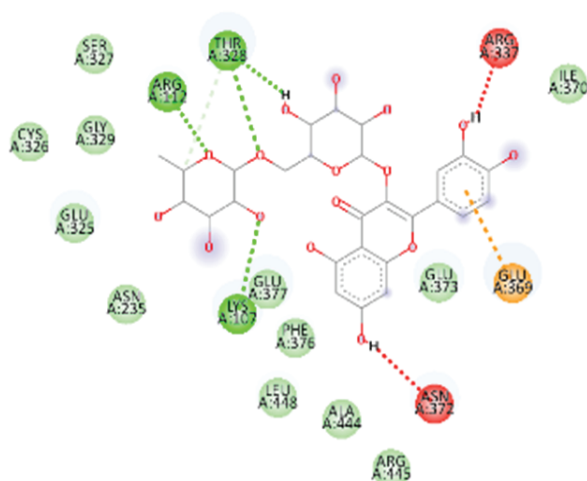
**The 2D diagram of naringin-FTO complex.** Light green: van der Waals; lime: conventional hydrogen bond; purple: Pi-sigma; magenta: Pi-Pi stacked/T-shaped; light pink: Pi-alkyl.

**Supplementary 3.**

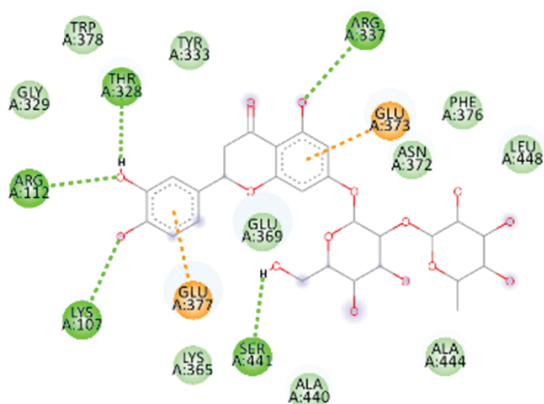
**The 2D diagram of quercetin-FTO complex.** Light green: van der Waals; lime: conventional hydrogen bond; red: unfavorable donor-donor; orange: Pi-anion; pale green: Pi-donor hydrogen bond; magenta: Pi-Pi stacked/T-shaped; light pink: Pi-alkyl.

**Supplementary 4.**

**The 2D diagram of GABA-FTO complex.** Light green: van der Waals; lime: conventional hydrogen bond; red: unfavorable donor-donor.

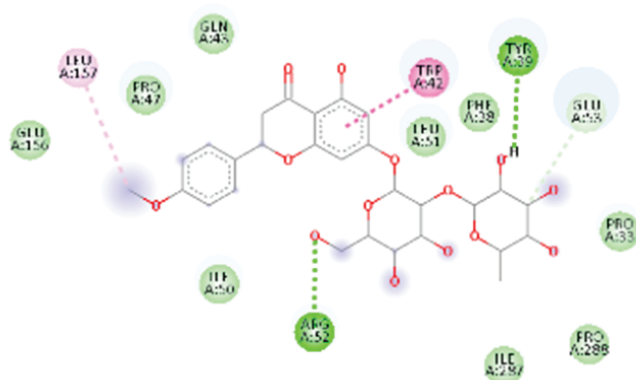
**Supplementary 5.**

**The 2D diagram of rutin-FTO complex.** Light green: van der Waals; lime: conventional hydrogen bond; pale green: carbon hydrogen bond; red: unfavorable donor-donor; orange: Pi-anion.

**Supplementary 6.**

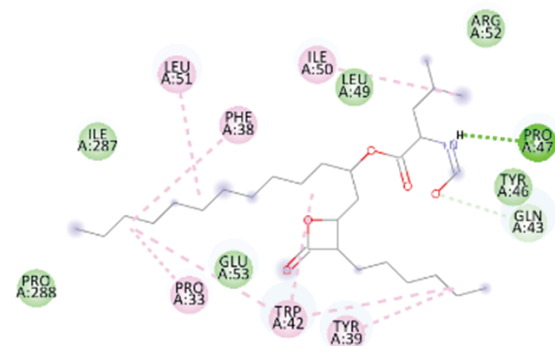
**The 2D diagram of neoeriocitrin-FTO complex.** Light green: van der Waals; lime: conventional hydrogen bond; orange: Pi-anion.

## Supplementary 7.



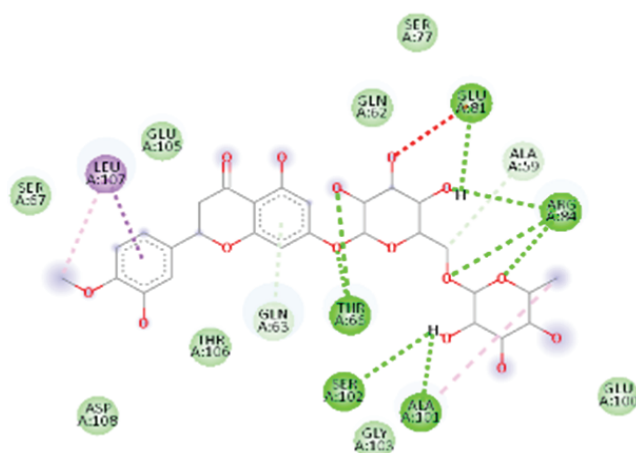
**The 2D diagram of poncirin-FTO complex.** Light green: van der Waals; lime: conventional hydrogen bond; pale green: carbon hydrogen bond; magenta: Pi-Pi stacked; light pink:alkyl.

## Supplementary 8.

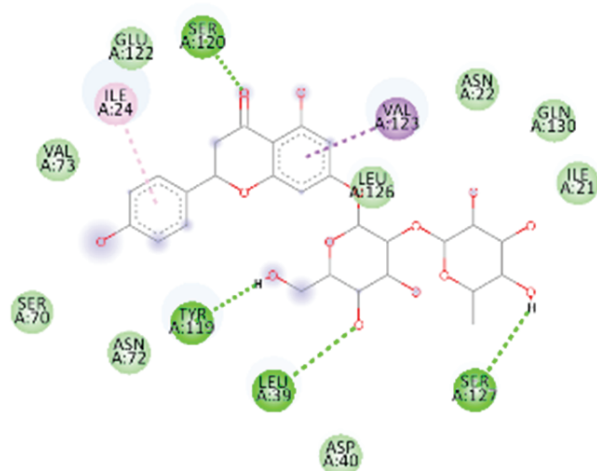


**The 2D diagram of Orlistat-FTO complex.** Light green: van der Waals; lime: conventional hydrogen bond; pale green: carbon hydrogen bond; magenta: Pi-Pi stacked; light pink: alkyl/Pi-alkyl.

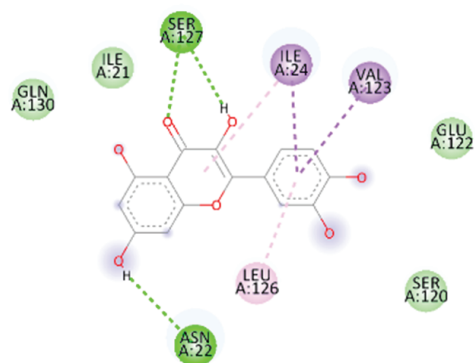
## Supplementary 9.



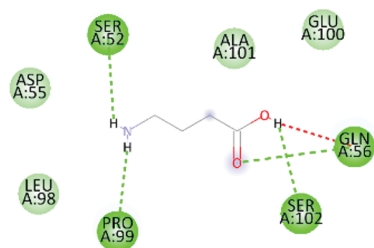
**The 2D diagram of hesperidin-leptin complex.** Light green: van der Waals; lime: conventional hydrogen bond; pale green: carbon/Pi-hydrogen bond; red: unfavorable acceptor-acceptor; purple: Pi-sigma; light pink: alkyl.

**Supplementary 10.**

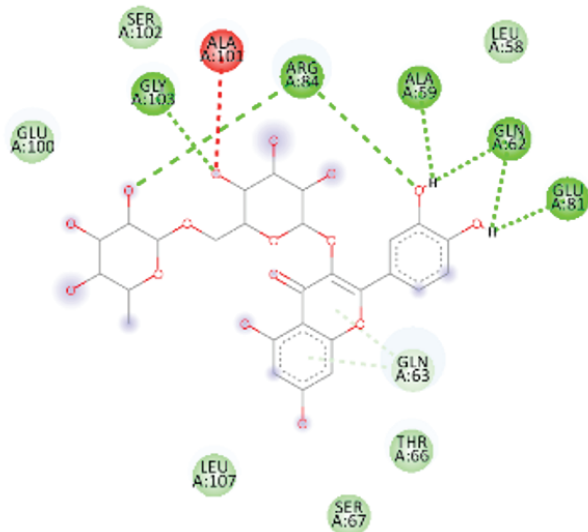
**The 2D diagram of naringin-leptin complex.** Light green: van der Waals; lime: conventional hydrogen bond; purple: Pi-sigma; light pink: Pi-alkyl.

**Supplementary 11.**

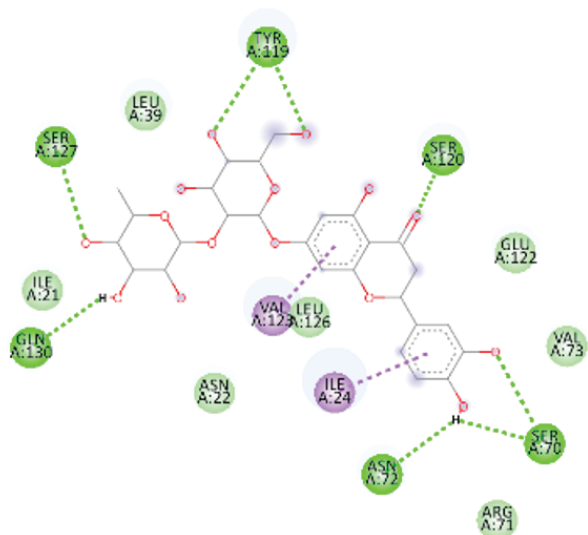
**The 2D diagram of quercetin-leptin complex.** Light green: van der Waals; lime: conventional hydrogen bond; purple: Pi-sigma; light pink: Pi-alkyl.

**Supplementary 12.**

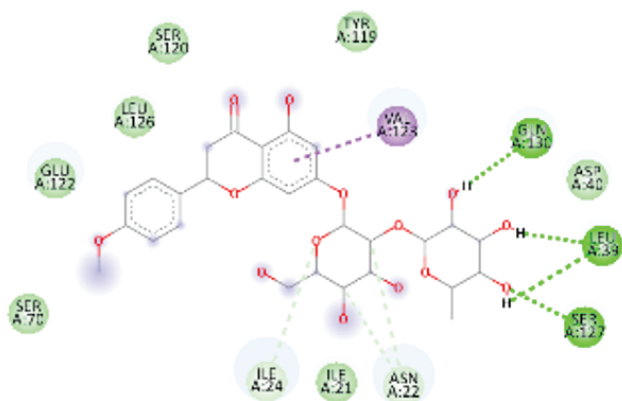
**The 2D diagram of GABA-leptin complex.** Light green: van der Waals; lime: conventional hydrogen bond; red: unfavorable donor-donor.

**Supplementary 13.**

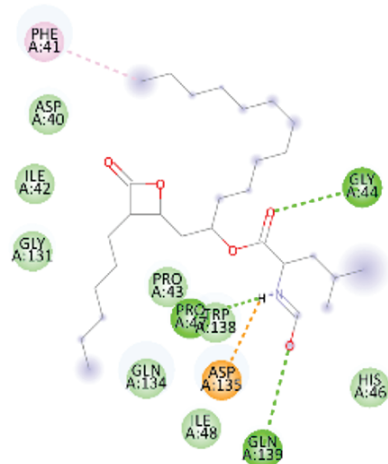
**The 2D diagram of rutin-leptin complex.** Light green: van der Waals; lime: conventional hydrogen bond; red: unfavorable acceptor-acceptor; pale green: Pi-donor hydrogen bond; purple: Pi-sigma.

**Supplementary 14.**

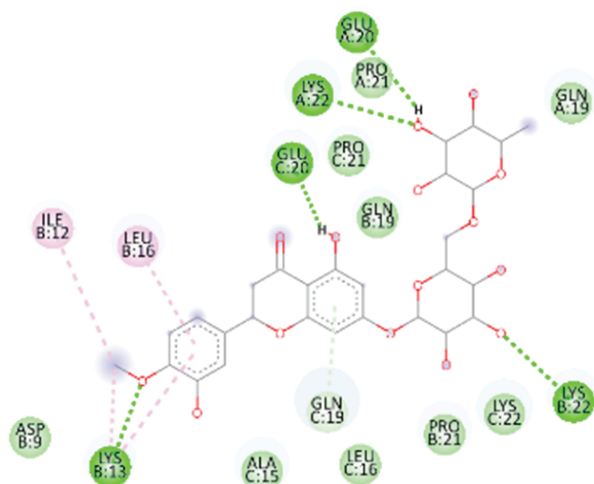
**The 2D diagram of neoeriocitrin-leptin complex.** Light green: van der Waals; lime: conventional hydrogen bond; purple: Pi-sigma.

**Supplementary 15.**

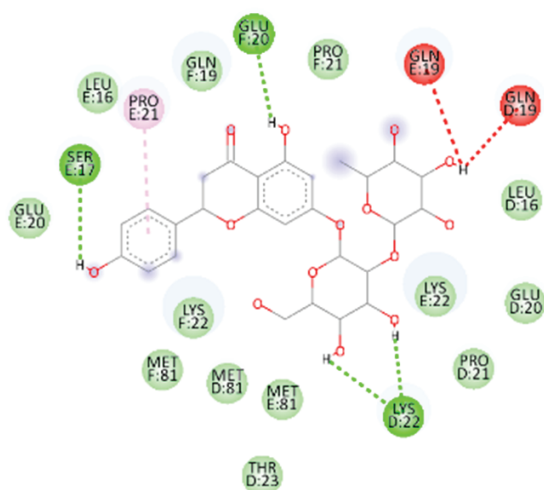
**The 2D diagram of poncirin-leptin complex.** Light green: van der Waals; lime: conventional hydrogen bond; pale green: carbon hydrogen bond; purple: Pi-sigma.

**Supplementary 16.**

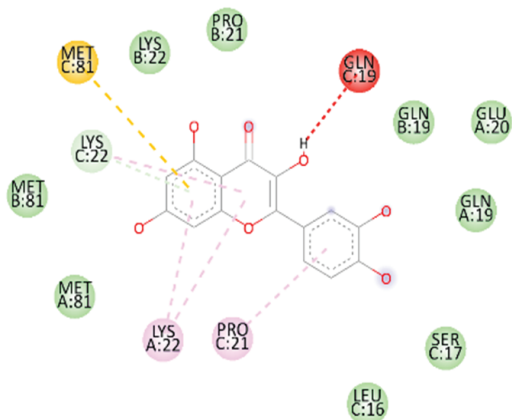
**The 2D diagram of Orlistat-leptin complex.** Light green: van der Waals; lime: conventional hydrogen bond; orange: salt bridge; light pink: Pi-alkyl.

**Supplementary 17.**

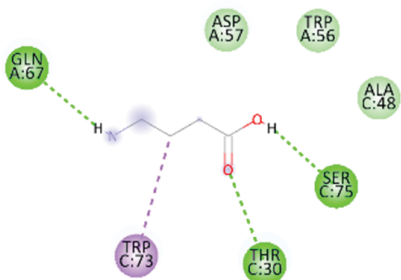
**The 2D diagram of hesperidin-resistin complex.** Light green: van der Waals; lime: conventional hydrogen bond; pale green: Pi-donor hydrogen bond; light pink: alkyl/Pi-alkyl.

**Supplementary 18.**

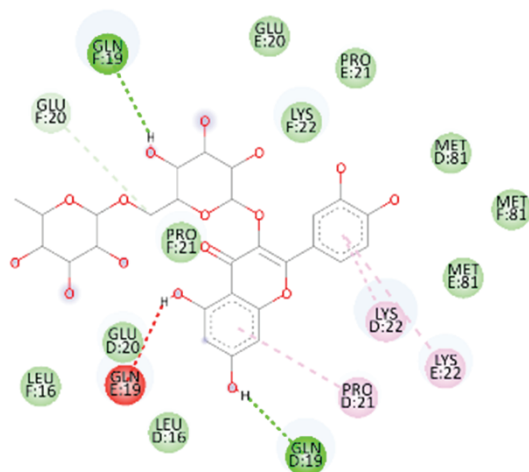
**The 2D diagram of naringin-resistin complex.** Light green: van der Waals; lime: conventional hydrogen bond; red: unfavorable donor-donor; light pink: Pi-alkyl.

**Supplementary 19.**

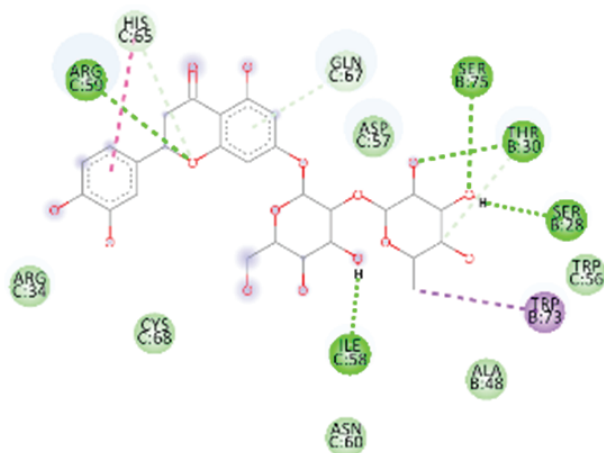
**The 2D diagram of quercetin-resistin complex.** Light green: van der Waals; red: unfavorable donor-donor; pale green: Pi-donor hydrogen bond; yellow: Pi-sulfur; light pink: Pi-alkyl.

**Supplementary 20.**

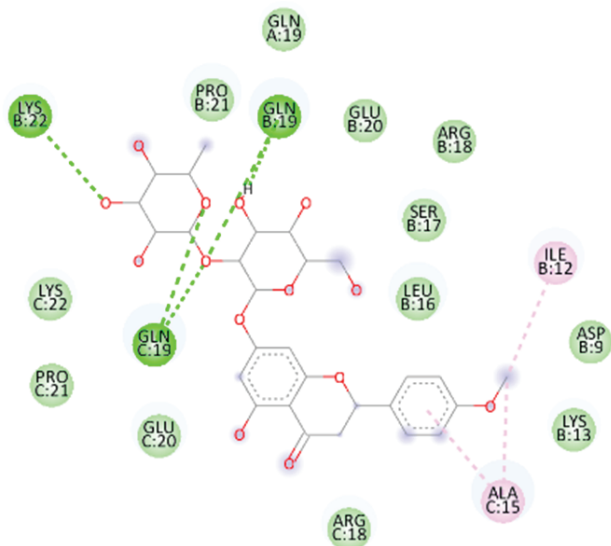
**The 2D diagram of GABA-resistin complex.** Light green: van der Waals; lime: conventional hydrogen bond; purple: Pi-sigma.

**Supplementary 21.**

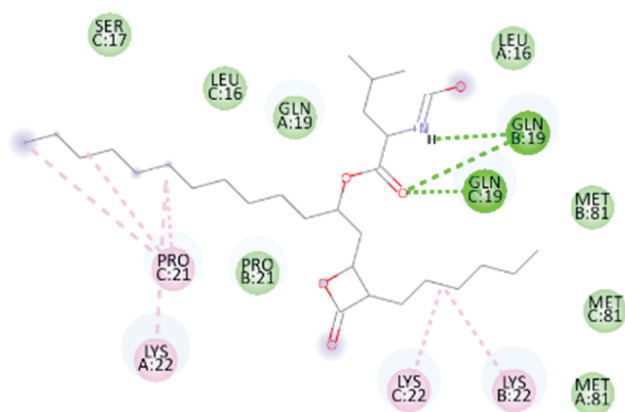
**The 2D diagram of rutin-resistin complex.** Light green: van der Waals; lime: conventional hydrogen bond; pale green: carbon hydrogen bond; red: unfavorable donor-donor; light pink: Pi-alkyl.

**Supplementary 22.**

**The 2D diagram of neoeriocitrin-resistin complex.** Light green: van der Waals; lime: conventional hydrogen bond; pale green: carbon/Pi-hydrogen bond; purple: Pi-sigma; magenta: Pi-Pi T-shaped.

**Supplementary 23.**

**The 2D diagram of poncirin-resistin complex.** Light green: van der Waals; lime: conventional hydrogen bond; light pink: alkyl/Pi-alkyl.

**Supplementary 24.**

**The 2D diagram of Orlistat-resistin complex.** Light green: van der Waals; lime: conventional hydrogen bond; light pink: alkyl.