**Supplementary Materials**

***Supplementary Methods***

**VRC and N-oxide UPLC-MS/MS analysis**

After the end of the reaction in the incubation system, 400 μL ice acetonitrile with internal standard was used to terminate the reaction by vortex mixing for 3 min, 4°C, 12,000 rpm, followed by centrifugation for 10 min and then clean injection. The plasma concentration of VRC and N-oxide is linear in the range of 0.999 ~ 8.0 mg/mL. The retention time of N-oxide VRC was 2.84 min, the standard curve was Y=2.251+0.578X (r = 0.997), the linear range was 3.9 ~ 1000 ng/mL, the lower limit of quantification of VRC and N-oxide was 0.1 mg/mL, the absolute recovery was more than 90%, and the RSD of intra-day and inter-day precision was less than 10%.

**Rat liver microsomes, intestinal microsomes preparation**

After killing, the abdominal cavity was opened after being soaked in 75% ethanol, and the liver was rinsed with precooled physiological saline in the portal vein of the liver. The livers of the rat were removed and quickly placed in an ice bath at 0 ~ 4°C. The homogenate of the liver tissue was controlled with glass homogenate. Rat liver microsomes were prepared by the differential centrifugation method: the samples were centrifuged at 3,000 × *g* for 10 minutes at 4°C, and the supernatant was then taken and centrifuged at 12,000 × *g* for 10 minutes at 4°C. Then, the supernatant was transferred to an ultracentrifuge tube, and centrifuged at 100,000 × *g*. After centrifugation at 4°C for 60 min, the supernatant was discarded, and an appropriate amount of PBS was slowly added to disperse the liver microsomes evenly. The microsomes were stored in a deep freezer at -80°C.