

**Figure S1.** IC<sub>50</sub> curves of (A) ZnONP50, (B) ZnONP100, and (C) ZnOBP on CYP1A2. Each data point represents the mean ± SD (n=3).

**Figure S2.** IC<sub>50</sub> curves of (A) ZnONP50, (B) ZnONP100, and (C) ZnOBP on CYP2A6. Each data point represents the mean ± SD (n=3).

**Figure S3.** IC<sub>50</sub> curves of (A) ZnONP50, (B) ZnONP100, and (C) ZnOBP on CYP2B6. Each data point represents the mean ± SD (n=3).

**Figure S4.** IC<sub>50</sub> curves of (A) ZnONP50, (B) ZnONP100, and (C) ZnOBP on CYP2C8. Each data point represents the mean ± SD (n=3).

**Figure S5.** IC<sub>50</sub> curves of (A) ZnONP50, (B) ZnONP100, and (C) ZnOBP on CYP2E1. Each data point represents the mean ± SD (n=3).

**Figure S6.** IC<sub>50</sub> curves of (A) ZnONP50, (B) ZnONP100, and (C) ZnOBP on CYP2J2. Each data point represents the mean ± SD (n=3).

**Figure S7.** IC<sub>50</sub> curves of (A) ZnONP50, (B) ZnONP100, and (C) ZnOBP on CYP3A5. Each data point represents the mean ± SD (n=3).

**Figure S8.** Lineweaver-Burk plots of inhibition of P450-2B6 by ZnONP50; P450-2B6 by ZnONP100; P450-2C8 by ZnONP50; P450-2E1 by ZnONP50; P450-2E1 by ZnONP100; P450-2E1 by ZnOBP; P450-2J2 by ZnONP50; P450-2J2 by ZnONP100; P450-3A5 by ZnONP50; P450-3A5 by ZnONP100. The second panel are respective secondary plots from the Lineweaver-Burk plot against concentrations of ZnO particle. Each data point represents the mean ± SD (n=3).

**Figure S9.** TDI curves of CYP2B6 by (A) ZnONP50 and (B) ZnONP100. Each data point represents the mean ± SD (n=3).

**Figure S10.** TDI curves of CYP2C8 by ZnONP50. Each data point represents the mean ± SD (n=3).

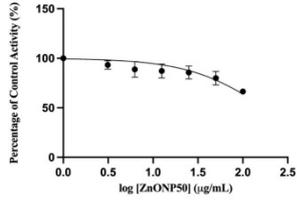
**Figure S11.** TDI curves of CYP2E1 by (A) ZnONP50, (B) ZnONP100, and (C) ZnOBP. Each data point represents the mean ± SD (n=3).

**Figure S12.** TDI curves of CYP2J2 by (A) ZnONP50 and (B) ZnONP100. Each data point represents the mean ± SD (n=3).

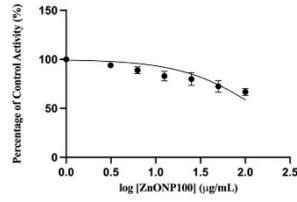
**Figure S13.** TDI curves of CYP3A5 by (A) ZnONP50 and (B) ZnONP100. Each data point represents the mean ± SD (n=3).

### S1A-C

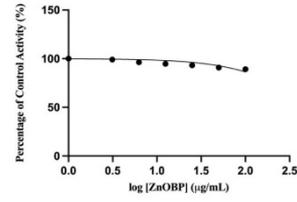
CYP1A2 Activity in Presence of Varying Concentrations of ZnONP50



CYP1A2 Activity in Presence of Varying Concentrations of ZnONP100

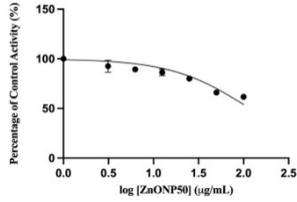


CYP1A2 Activity in Presence of Varying Concentrations of ZnOBP

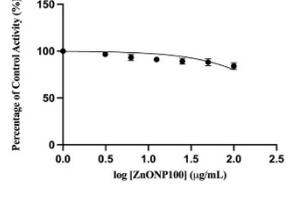


### S2A-C

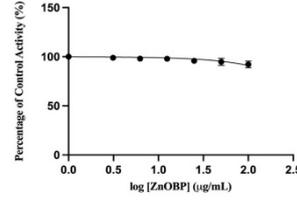
CYP2A6 Activity in Presence of Varying Concentrations of ZnONP50



CYP2A6 Activity in Presence of Varying Concentrations of ZnONP100

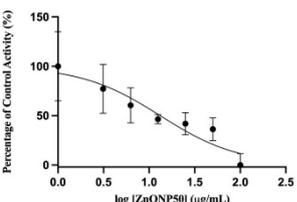


CYP2A6 Activity in Presence of Varying Concentrations of ZnOBP

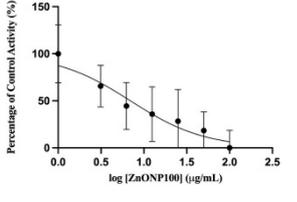


### S3A-C

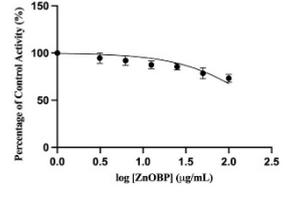
CYP2B6 Activity in Presence of Varying Concentrations of ZnONP50



CYP2B6 Activity in Presence of Varying Concentrations of ZnONP100

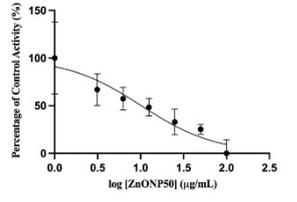


CYP2B6 Activity in Presence of Varying Concentrations of ZnOBP

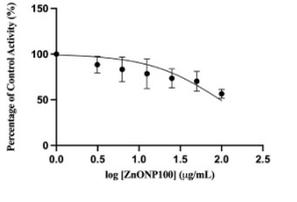


### S4A-C

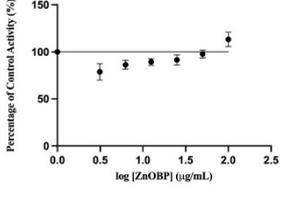
CYP2C8 Activity in Presence of Varying Concentrations of ZnONP50



CYP2C8 Activity in Presence of Varying Concentrations of ZnONP100

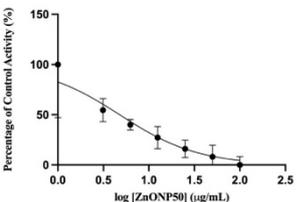


CYP2C8 Activity in Presence of Varying Concentrations of ZnOBP

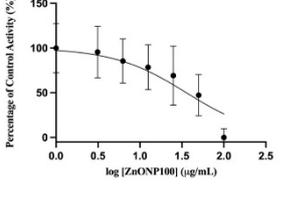


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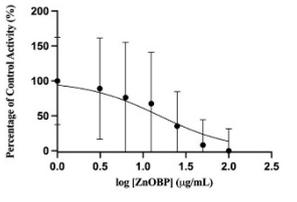
CYP2E1 Activity in Presence of Varying Concentrations of ZnONP50



CYP2E1 Activity in Presence of Varying Concentrations of ZnONP100

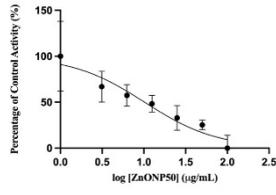


CYP2E1 Activity in Presence of Varying Concentrations of ZnOBP

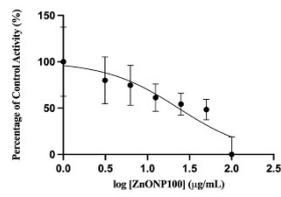


## S6A-C

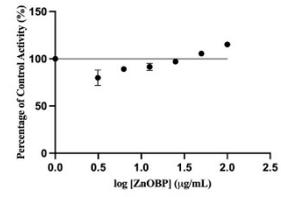
CYP2J2 Activity in Presence of Varying Concentrations of ZnONP50



CYP2J2 Activity in Presence of Varying Concentrations of ZnONP100

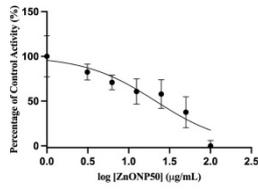


CYP2J2 Activity in Presence of Varying Concentrations of ZnOBP

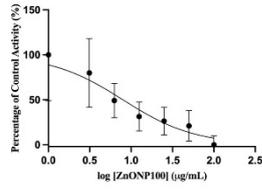


## S7A-C

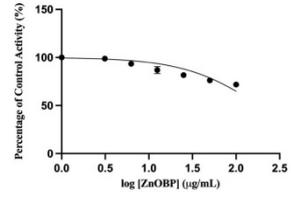
CYP3A5 Activity in Presence of Varying Concentrations of ZnONP50

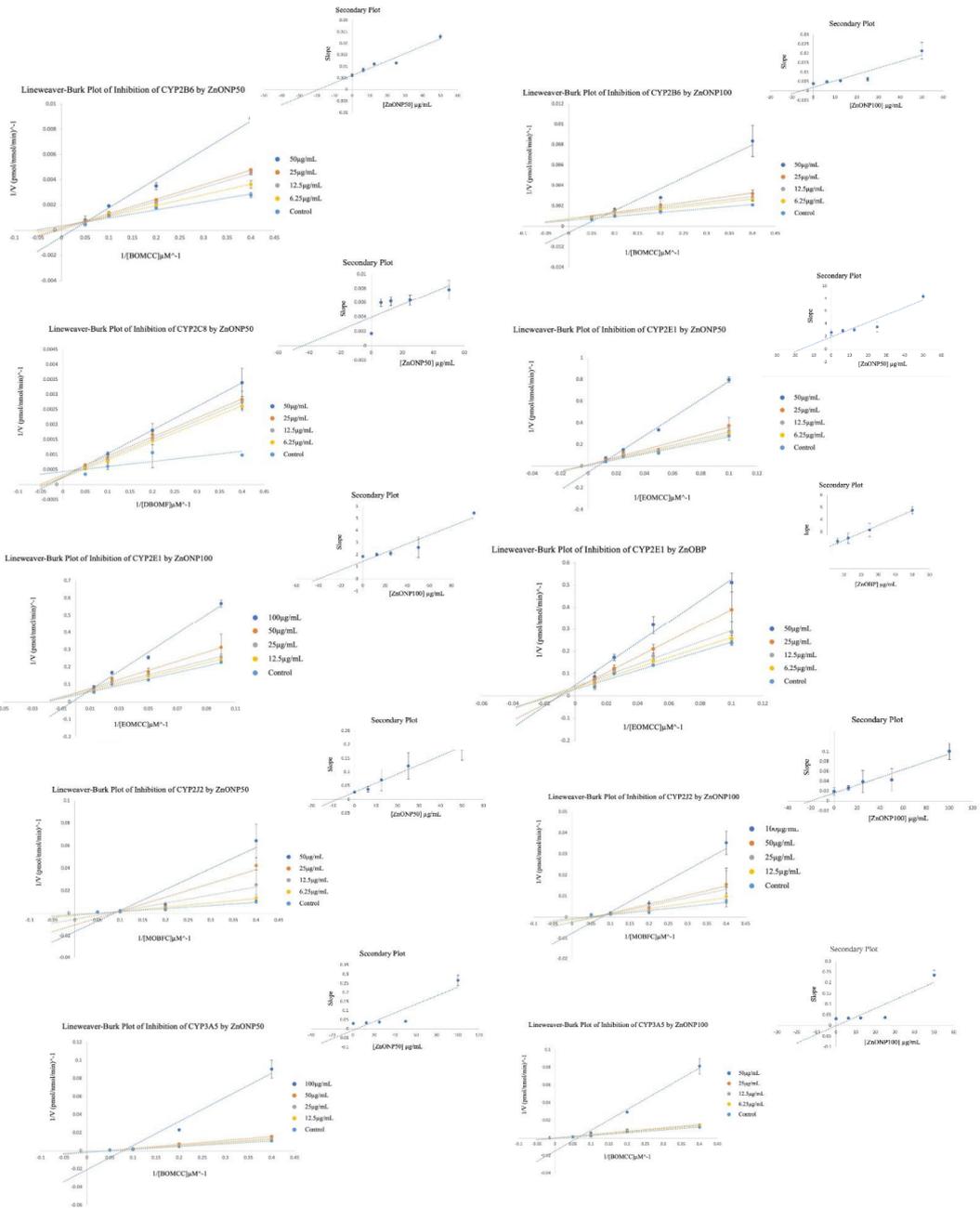


CYP3A5 Activity in Presence of Varying Concentrations of ZnONP100



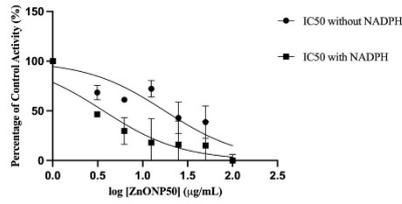
CYP3A5 Activity in Presence of Varying Concentrations of ZnOBP



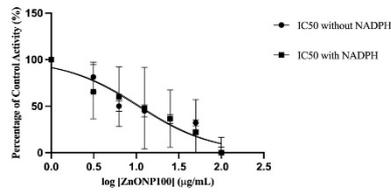


## S9A-B

Time Dependent Inhibition of CYP2B6 in Presence of Varying Concentrations of ZnONP50

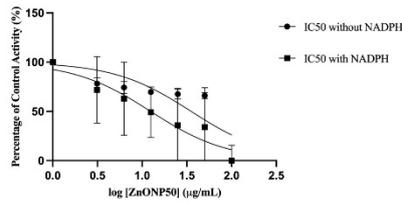


Time Dependent Inhibition of CYP2B6 in Presence of Varying Concentrations of ZnONP100



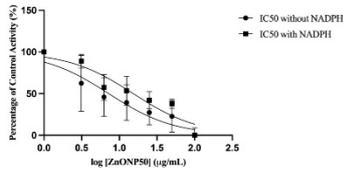
## S10

Time Dependent Inhibition of CYP2C8 in Presence of Varying Concentrations of ZnONP50

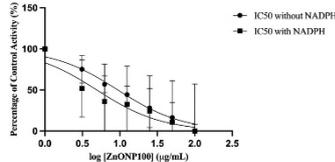


## S11A-C

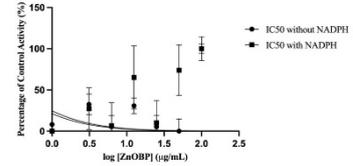
Time Dependent Inhibition of CYP2E1 in Presence of Varying Concentrations of ZnONP50



Time Dependent Inhibition of CYP2E1 in Presence of Varying Concentrations of ZnONP100

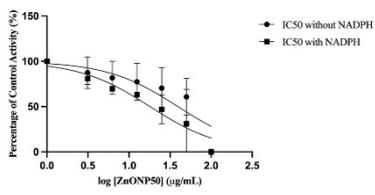


Time Dependent Inhibition of CYP2E1 in Presence of Varying Concentrations of ZnOBP

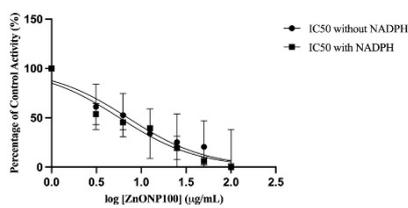


## S12A-B

Time Dependent Inhibition of CYP2J2 in Presence of Varying Concentrations of ZnONP50

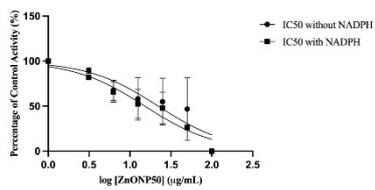


Time Dependent Inhibition of CYP2J2 in Presence of Varying Concentrations of ZnONP100

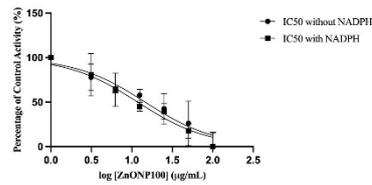


## S13A-B

Time Dependent Inhibition of CYP3A5 in Presence of Varying Concentrations of ZnONP50



Time Dependent Inhibition of CYP3A5 in Presence of Varying Concentrations of ZnONP100



**Table S1.** Final concentration of reagents for each CYP isozyme reaction. *CYP* cytochrome P450.

<b>CYP Isozyme</b>	<b>CYP Isozyme (nM)</b>	<b>Vivid® CYP450 Reaction Buffer (nM)</b>	<b>Vivid® Substrate (µM)*</b>	<b>Vivid® NADP+ (µM)</b>
1A2	3	Buffer I – 100	EOMCC - 5	30
2A6	10	0.5X Buffer II - 25	CC - 10	30
2B6	3	Buffer I - 100	BOMCC - 5	30
2C8	1	Buffer II - 50	DBOMF - 5	100
2E1	10	Buffer III - 200	EOMCC - 20	30
2J2	3	Buffer II - 50	MOBFC - 5	30
3A5	10	Buffer I – 100	BOMCC - 5	30