**S7 Table:** Kinetic Constants for recombinant mutants of CYP6P9b metabolism of permethrin and diethoxyfluorescein

|  |  |  |  |
| --- | --- | --- | --- |
| **Recombinant Proteins** | ***Kcat* (min-1)** | ***Km* (µM)** | ***Kcat*/*Km* (min-1 µM-1)** |
|  |  **Permethrin** |  |  |
| **Val109Ile\_CYP6P9b** | 1.35±0.57\*\* | 20.5±1.35† | 0.06±0.03$$$ |
| **Asp335Glu\_CYP6P9b** | 0.98±0.12\*\*\* | 5.19±1.89† | 0.19±0.07$$ |
| **Asn384Ser\_CYP6P9b** | 0.87±0.08\*\*\* | 17.85±0.87† | 0.04±0.005$$$ |
| **Pro401Ala\_CYP6P9b** | 4.21±0.96\* | 15.38±6.50 | 0.27±0.13$ |
| **MALCYP6P9b** | 7.902±0.83 | 10.33±2.38 | 0.76±0.19 |
|  |  **Diethoxyfluorescein** |  |  |
| **Val109Ile\_CYP6P9b** | 7.32±0.13\*\*\* | 0.10±0.007 | 72.47±5.18$$ |
| **Asp335Glu\_CYP6P9b** | 21.82±3.13\*\* | 0.23±0.10† | 94.86±43.43$$ |
| **Asn384Ser\_CYP6P9b** | 5.46±0.32\*\*\* | 0.10±0.023 | 54.05±12.71$$ |
| **Pro401Ala\_CYP6P9b** | 88.32±7.57 | 0.25±0.07† | 353.28±103.44$ |
| **MALCYP6P9b** | 103.4±5.86 | 0.13±0.003 | 795.38±48.67 |

Values are as mean ± S.E.M. of three independent replicates. Significantly different from negative control (-NADPH).

Apparent *Kcat* given as disappearance of permethrin/min/pmol P450. Catalytic efficiency was calculated as K*cat*/*K****m.***

\*\* and \*\*\* statistically significant *Kcat* values at p<0.01 and p<0.001 respectively compared with MALCYP6P9b.

$ and $$ statistically significant *Kcat* values at p<0.05 and p<0.01 respectively compared with MALCYP6P9b.