**Table S4:** ADMET predicted profile of top hit compounds 3-Isopropoxy1,1,1,7,7,7-hexamethyl-3,5,5-tris (trimethylsiloxy) tetrasiloxane and 2-Methoxy-5-methylthiophene.

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameters** | **3-Isopropoxy1,1,1,7,7,7-hexamethyl-3,5,5-tris (trimethylsiloxy) tetrasiloxane** | **2-Methoxy-5-methylthiophene** | |
| **Absorption** | | | |
| Log S (Aqueous Solubility) | -6.06 | -2.35 | |
| Human Intestinal Absorption | High | High | |
| Blood-Brain Barrier | 3.44 | 4.12 | |
| CaCo-2 Permeability | + | + | |
| **Distribution** | | | |
| Drug-induced liver injury (DILI) | No | Yes | |
| P-glycoprotein Substrate | Yes | No | |
| P-glycoprotein Inhibition | Yes | Yes | |
| **Metabolism** | | | |
| CYP450 1A2 Inhibitor | No | No | |
| CYP450 2C9 Inhibitor | No | No | |
| CYP450 2D6 Inhibitor | No | No | |
| CYP450 2C19 Inhibitor | No | No | |
| CYP450 3A4 Inhibitor | No | No | |
| Human liver microsomal (HLM) stability | Yes | Yes | |
| **Toxicity assay** | | | |
| Human Ether-ago-Go -Related Gene Blocker (Cardiotoxicity) | No | No | |
| AMES Test (Mutagenicity) | No | No | |
| Cytotoxicity (HepG2) | No | No | |
| MMP (Mitochondrial Toxicity) | No | No | |
| Maximum Recommended Therapeutic Dose (MRTD) (mg/day) | 352 | 106 | |
| **Bioactivity score** | | | |
| GPCR ligand | 0.22 | | -2.85 |
| Ion channel modulator | 0.15 | | -3.21 |
| Kinase inhibitor | 0.04 | | -2.44 |
| Nuclear receptor ligand | 0.01 | | -3.57 |
| Protease inhibitor | 0.29 | | -3.13 |
| Enzyme inhibitor | 0.40 | | -2.72 |