

## Staurosporine

Product Specifications	
<b>Catalog Number:</b>	HPK-112
<b>Application Notes:</b>	Not sterile <i>The optimal dilution for a specific application must be determined by the investigator</i>
<b>Molecular Weight:</b>	466.5
<b>Purity:</b>	99% as determined by TLC analysis
<b>Molecular Formula:</b>	C <sub>28</sub> H <sub>26</sub> N <sub>4</sub> O <sub>3</sub>
<b>Format:</b>	Lyophilized solid (m.p. 81-83°C), soluble in DMSO (25 mg/mL) and DMF (25 mg/mL)
<b>Storage:</b>	Store lyophilized at 0-4°C; store reconstituted at -20°C for up to 3 months <i>Shipping conditions may differ from the recommended storage temperature</i>
<b>Related Products:</b>	
KAS-PK017	PKA (CT) Polyclonal Antibody
PPK-448	PKA Catalytic β Active Recombinant Protein
PPK-463	PKA Catalytic γ Active Recombinant Protein
KAP-PK002	PKG Polyclonal Antibody
KAM-PK010	PKC δ (phospho-Tyr311) Antibody
PPK-450	PKC μ Active Recombinant Protein
SPK-104	PKC Substrate
KAP-CA010	PKC δ (phospho-Tyr311) Antibody

### Background:

Staurosporine inhibits a variety of kinases including PKA ( $K_i=7.0$  nM), PKG ( $K_i=8.5$  nM), MLCK ( $K_i=1.3$  nM), PKC ( $K_i=0.7$  nM)<sup>1,2</sup>, CaMK ( $IC_{50}=20$  nM)<sup>3</sup>, tyrosine kinases ( $IC_{50}=70$  nM)<sup>4,5</sup> and phosphorylase kinase ( $IC_{50}=0.5$  nM)<sup>6</sup>. Inhibition occurs *via* interaction with the ATP binding site<sup>7</sup>. Staurosporine induces PKC translocation<sup>8</sup>, augments PMA-induced ornithine decarboxylase<sup>9</sup>, activates a Bcl-2-regulated apoptosis pathway<sup>10</sup>, and binds to the ATP binding domain. The  $IC_{50}$ 's for the recombinant PKC isotypes α, β, γ, δ, and ε were 58, 65, 49, 325 and 160 nM, respectively, but it did not inhibit PKC-ζ<sup>11</sup>. At 1 μM, staurosporine induced apoptosis in CHO cells<sup>12</sup>. It also inhibits topoisomerase II directly by blocking transfer of phosphodiester bonds from DNA to active site tyrosine<sup>13</sup>.

#### References:

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