AN-2728 is a potent inhibitor of PDE4 and cytokine release; inhibit PDE4 with an IC\textsubscript{50} of 0.49 μM.

**IC50 & Target:** IC50: 0.49 μM (PDE4)[1]

**In Vitro:** AN-2728 inhibits PDE4, TNF-α, IL-2, IFN-γ, IL-5 and IL-10 with IC\textsubscript{50} values of 0.49, 0.54, 0.61, 0.83, 2.4 and 5.3 μM. AN-2728 shows the most potent activity against PDE4 catalytic domain, but it also shows inhibition against PDE1A3, PDE3Cat, and PDE7A1. AN-2728 inhibits PDE isozymes PDE1A3, PDE3Cat, PDE4Cat and PDE7A1 with IC\textsubscript{50} values of 6.1, 6.4, 0.11 and 0.73 μM[1]. Crystallography reveals that interaction of benzoxaboroles with the hydrophobic pocket in the PDE4 catalytic domain increase their affinity for PDE4. These benzoxaboroles strongly suppresses the secretion of cytokines associated with Ps and AD[2]. AN-2728 is a topically administered, boron-containing, anti-inflammatory compound that inhibits PDE4 activity and thereby suppresses the release of TNFalpha, IL-12, IL-23 and other cytokines[3].

**In Vivo:** AN-2728 shows significant inhibition against the ear edema caused by phorbol ester after dosing at 1 mg/ear×2 (78% and 68%, respectively). The efficacy is comparable to that of dexamethasone, suggesting that AN-2728 has good anti-inflammatory activity as well as skin penetration[1]. AN-2728 is reported to be well tolerated and to demonstrate significant effects on markers of efficacy, with results that were comparable to positive controls in clinical trials[3].

**References:**

