Background: Dexamethasone is a synthetic glucocorticoid that binds to the human glucocorticoid receptor (GR). Treatment of cells with dexamethasone leads to nuclear translocation and activation of GR. This elicits anti-inflammatory, cellular proliferation, and metabolic responses via GR-mediated transcriptional activation or repression of target genes (1-4). Research studies show that dexamethasone inhibits dendritic cell differentiation and maturation (5). The inhibition of nitric oxide synthase by dexamethasone has also been observed (6).

Background References:

Molecular Formula: C_{22}H_{29}FO_5

Molecular Weight: 392.5 g/mol

Solubility: Soluble in DMSO at 40 mg/ml.

Purity: >98%

Storage: Store lyophilized or in solution at -20°C, desiccated. Protect from light. In lyophilized form, the chemical is stable for 24 months. Once in solution, use within 3 months to prevent loss of potency. Aliquot to avoid multiple freeze/thaw cycles.

Directions for Use: Dexamethasone is supplied as a lyophilized powder. For a 10 mM stock, reconstitute the 5 mg in 1.27 ml DMSO. Working concentrations and length of treatment can vary depending on the desired effect, but it is typically used at 10-1,000 nM for 1-24 hr.

Western blot analysis of extracts from HEK293 cells, untreated (-) or treated with Dexamethasone (1 hr) at the indicated concentrations, using Phospho-Glucocorticoid Receptor (Ser211) Antibody #4161 (upper) and Glucocorticoid Receptor (D6H2L) XP® Rabbit mAb #12041 (lower).

Western blot analysis of extracts from A549 cells, untreated (-) or treated with Dexamethasone (24 hr) at the indicated concentrations, using β-Arrestin 1 (D8O3J) Rabbit mAb #12697 (upper) and β-Actin (D6A8) Rabbit mAb #8457 (lower).

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