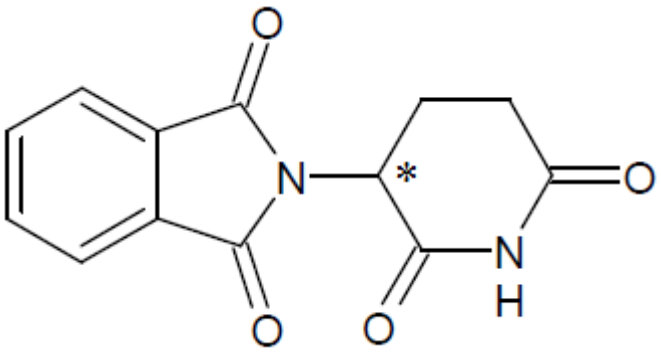

Figure 13: (RS)-2-(2,6-dioxopiperidin-3-yl)-1H-isoindole-1,3(2H)-dione.

1.6.7 Lenalidomide

Lenalidomide, a thalidomide analogue, is an immunomodulatory agent with anti-angiogenic properties, Lenalidomide has an asymmetric carbon atom and can exist as the optically active form S (-) and R (+), and is produced as a racemic mixture with a net optical rotation of zero, Indolone group instead of phthalimide in thalidomide and glutarimide remain in the structure (Galustian *et al.*, 2009).

Lenalidomide possesses immunomodulatory and anti-angiogenic properties. Lenalidomide inhibits the secretion of pro-inflammatory cytokines and increases the secretions of anti-inflammatory cytokines from peripheral blood mono-nuclear cells. Lenalidomide inhibits cell proliferation with varying effectiveness (IC50) in some but not all cell lines (Chanan-Khan and Cheson 2008).

Lenalidomide inhibits the expression of cyclooxygenase-2 (COX-2) but not COX-1 in vitro (Ebert *et al.*, 2008).