

## A New Heterocyclic Compound: Crystal Structure and Treatment Activity on Retinoblastoma

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**SUMMARY.** The new heterocyclic compound (3aR,5R,6S,6aR)-5-((tert-butyl-diphenylsilyloxy)methyl)-2,2-dimethyl-tetrahydrofuro[2,3-d][1,3]dioxol-6-ol (**1**) was acquired through multiple synthesis route utilizing L-xylose (**2**) as a raw material, and was ultimately characterized through <sup>1</sup>H NMR, IR, and crystallography of single crystal X-ray. Its application values on the Retinoblastoma were discussed and the specific mechanism was analyzed simultaneously. The CCK-8 was firstly performed and the inhibitory activity on the Retinoblastoma cells was determined. In addition to this, real time RT-PCR was applied for detecting RB1 gene relative expression after compound exposure.

**RESUMEN.** El nuevo compuesto heterocíclico (3aR,5R,6S,6aR)-5-((terc-butildifenilsililoxi)metil)-2,2-dimetil-tetrahidrofuro[2,3-d][1,3]dioxol-6-ol (**1**) se adquirió mediante una ruta de síntesis múltiple utilizando L-xilosa (**2**) como materia prima y, finalmente, se caracterizó mediante RMN <sup>1</sup>H, IR y cristalografía de rayos X de cristal único. Se discutieron sus valores de aplicación en el retinoblastoma y se analizó simultáneamente el mecanismo específico. En primer lugar se realizó el CCK-8 y se determinó la actividad inhibitoria sobre las células de retinoblastoma. Además de esto, se aplicó RT-PCR en tiempo real para detectar la expresión relativa del gen RB1 después de la exposición al compuest

**KEY WORDS:** heterocycles, retinoblastoma, X-ray crystallography.

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