Accepted Manuscript

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PII: S0040-4020(16)30441-0

DOI: 10.1016/j.tet.2016.05.042

Reference: TET 27769

To appear in: *Tetrahedron*

Received Date: 25 February 2016

Revised Date: 6 May 2016

Accepted Date: 16 May 2016

Please cite this article as: Yuan R, Li M-q, Xu J-b, Huang S-y, Zhou S-l, Zhang P, Liu J-j, Wu H, Synthesis and optical properties of novel Tröger's base derivatives, *Tetrahedron* (2016), doi: 10.1016/j.tet.2016.05.042.

Graphical Abstract

Synthesis and optical properties of novel Tröger's base derivatives

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Diphenylamine, phenothiazine or carbazole were introduced into Tröger's base skeleton *via* Ullmann or Suzuki coupling to afford new TB derivatives. Their optical properties tests, density functional theory (B3LYP; 6-31G*) calculations were investigated. Incidentally anti-cancer activity against human hepatoma HepG2 cells in vitro (MTT assay) were investigated. All the results indicated that these novel compounds have the potential as fluorescence materials.