Supplementary Material

The synthesis of thioglucosides substituted 1,4-naphthoquinones and their conversion in oxathiane fused quinone-thioglucoside conjugates

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The image contains a chemical structure labeled as 4a, along with a series of chemical shifts in ppm. The shifts are as follows:

- 3.038, 3.096, 3.136, 3.198, 3.324, 3.460
- 4.263
- 5.0
- 5.106, 4.926
- 5.367, 5.106, 4.926
- 5.490, 5.367, 5.106, 4.926
- 5.490, 5.367, 5.106, 4.926
- 4.0
- 4.5
- 5.0
- 5.5
- 6.0
- 6.5
- 7.0
- 7.5
- 8.0

Chemical shifts are provided in three columns, indicating the presence of multiple peaks at different ppm values.


**Chemical Structure (10b)**

- The molecule contains multiple functional groups, including:
  - A keto group (C=O) at the 4-position.
  - An ester group (O=O) at the 3-position.
  - Chlorine (Cl) atoms attached at various positions.
  - Me (methyl) groups attached at specific positions.

**NMR Spectral Data**

- The peaks are labeled with their corresponding frequencies in ppm.
- Peaks are observed at: 7.261, 4.247, 3.990, 3.964, 3.044, 3.034, 3.000 ppm.

**Notes**

- The structure (10b) is depicted with appropriate functional groups and atomic labels.
- The NMR spectrum shows the chemical shift values for various protons in the molecule.
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The image contains a chemical structure labeled as 14a, along with a 1D NMR spectrum. The spectrum includes peaks at various ppm values, such as 56.639, 56.764, 60.149, 60.416, 69.556, 74.254, 78.195, 81.127, 81.964, 119.713, 120.313, 121.014, 121.523, 130.224, 152.195, 152.882, 156.199, 157.254, 160.416, 177.127, 181.324, and others, indicating the presence of various functional groups in the molecule.
The image contains a chemical structure labeled as 15c, along with a 1H NMR spectrum. The spectrum shows peaks at various ppm values, indicating the chemical shifts of different protons in the molecule. The structures and peaks are annotated with specific ppm values, which are crucial for identifying the chemical environment of each proton.
17b