Supporting Material

Reactivity of sulfonylbutadienes. Synthesis of Ginsenol analogues

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1. The X-ray crystal structure of 4a

Compound 4a was found to crystallise in a polar space group with three crystallographically independent molecules (A, B and C) in the asymmetric unit, shown in Figure 3 in the paper (B), and Figures S1 (A) and S4 (C) here in the supporting information. The N(10) morpholine and the C(22) phenyl rings in molecule C were both found to be disordered. In each case two partial occupancy orientations were identified (of ca. 63 and 37% occupancy for the morpholine ring, and ca. 57 and 43% occupancy for the phenyl ring), the geometries were optimised, and only the non-hydrogen atoms of the major occupancy orientations were refined anisotropically.

![Molecular structure of 4a](image)

**Figure S1.** The molecular structure of one (A) of the three crystallographically independent molecules present in the crystals of 4a.
**Figure S2.** The molecular structure of one (A) of the three crystallographically independent molecules present in the crystals of 4a (30% probability ellipsoids).

**Figure S3.** The molecular structure of one (B) of the three crystallographically independent molecules present in the crystals of 4a (30% probability ellipsoids).
Figure S4. The molecular structure of one (C) of the three crystallographically independent molecules present in the crystals of 4a.

Figure S5. The molecular structure of one (C) of the three crystallographically independent molecules present in the crystals of 4a (30% probability ellipsoids).