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(*E*)-3-[4-(Decyloxy)phenyl]-1-(4-hydroxyphenyl)prop-2-en-1-one

Ibrahim Abdul Razak,[a]*‡ Hoong-Kun Fun,[a]§ Zainab Ngaini,[b] Norashikin Irdawaty Abd Rahman[b] and Hasnain Hussain[c]

[a]X-ray Crystallography Unit, School of Physics, Universiti Sains Malaysia, 11800 USM, Penang, Malaysia, [b]Department of Chemistry, Faculty of Resource Science and Technology, Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, Malaysia, and [c]Department of Molecular Biology, Faculty of Resource Science and Technology, Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, Malaysia
Correspondence e-mail: arazaki@usm.my

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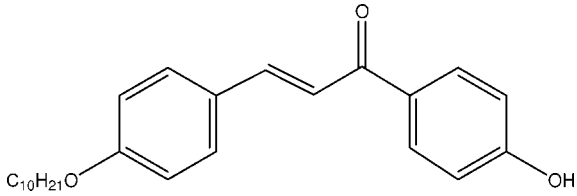
Key indicators: single-crystal X-ray study; T = 100 K; mean σ(C–C) = 0.003 Å; R factor = 0.064; wR factor = 0.132; data-to-parameter ratio = 19.1.

In the title compound, $C_{25}H_{32}O_3$, the enone group adopts an *s–cis* conformation. The alkoxy unit is nearly planar and is in a *trans* conformation. The two benzene rings make a dihedral angle of 18.87 (9)°. In the crystal structure, molecules are linked into chains running along the *a* axis by intermolecular O—H···O hydrogen bonds involving the hydroxy and keto groups. The chains are crosslinked along the *b* axis *via* C—H···O hydrogen bonds, forming a two-dimensional network parallel to the *ab* plane.

Related literature

For the biological properties of chalcone derivatives, see: Bhat *et al.* (2005); Xue *et al.* (2004); Satyanarayana *et al.* (2004); Lee *et al.* (2006). For related structures, see: Ng *et al.* (2006); Razak *et al.* (2009); Ngaini, Fadzillah *et al.* (2009); Ngaini, Rahman *et al.* (2009). For bond-length data, see: Allen *et al.* (1987). For the stability of the temperature controller used for the data collection, see: Cosier & Glazer (1986).



Experimental

Crystal data

$C_{25}H_{32}O_3$
M_r = 380.51
Orthorhombic, *Pbca*
a = 10.5192 (3) Å
b = 9.9839 (3) Å
c = 40.8415 (12) Å
V = 4289.3 (2) Å^3
Z = 8
Mo $K\alpha$ radiation
μ = 0.08 mm^{-1}
T = 100 K
0.58 × 0.49 × 0.03 mm

Data collection

Bruker APEXII CCD area-detector diffractometer
Absorption correction: multi-scan (*SADABS*; Bruker, 2005)
T_{min} = 0.957, T_{max} = 0.998
42832 measured reflections
4922 independent reflections
3526 reflections with $I > 2\sigma(I)$
R_{int} = 0.082

Refinement

$R[F^2 > 2\sigma(F^2)]$ = 0.064
$wR(F^2)$ = 0.132
S = 1.10
4922 reflections
258 parameters
H atoms treated by a mixture of independent and constrained refinement
$\Delta\rho_{max}$ = 0.20 e Å^{-3}
$\Delta\rho_{min}$ = −0.22 e Å^{-3}

Table 1
Hydrogen-bond geometry (Å, °).

D—H···A	D—H	H···A	D···A	D—H···A
O1—H1O1···O2^{i}	0.95 (3)	1.71 (3)	2.655 (2)	177 (3)
C5—H5···O1^{ii}	0.93	2.48	3.340 (2)	155

Symmetry codes: (i) $x+\frac{1}{2}, y, -z+\frac{1}{2}$; (ii) $-x+2, y-\frac{1}{2}, -z+\frac{1}{2}$.

Data collection: *APEX2* (Bruker, 2005); cell refinement: *SAINT* (Bruker, 2005); data reduction: *SAINT*; program(s) used to solve structure: *SHELXTL* (Sheldrick, 2008); program(s) used to refine structure: *SHELXTL*; molecular graphics: *SHELXTL*; software used to prepare material for publication: *SHELXTL* and *PLATON* (Spek, 2009).

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Supplementary data and figures for this paper are available from the IUCr electronic archives (Reference: CI2782).

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‡ Thomson Reuters ResearcherID: A-5599-2009.
§ Additional correspondence author, e-mail: hkfun@usm.my. Thomson Reuters ResearcherID: A-3561-2009.