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(*E*)-3-(4-Decyloxyphenyl)-1-(2-hydroxyphenyl)prop-2-en-1-one

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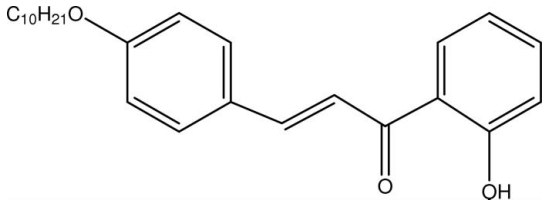
Key indicators: single-crystal X-ray study; T = 100 K; mean σ(C–C) = 0.002 Å; R factor = 0.058; wR factor = 0.165; data-to-parameter ratio = 24.1.

In the title compound, $C_{25}H_{32}O_3$, the enone group is in an *s–cis* configuration. The dihedral angle between the benzene rings is 8.84 (7)°. An intramolecular O—H···O interaction between the keto and hydroxy groups forms an $S(6)$ ring motif. Intermolecular C—H···O interactions link the molecules into supramolecular chains along the *c* axis which are subsequently stacked down the *b* axis; the crystal structure is further consolidated by C—H···π interactions.

Related literature

For general background, see: Bhat *et al.* (2005); Xue *et al.* (2004); Satyanarayana *et al.* (2004); Won *et al.* (2005); Zhao *et al.* (2005). For related structures, see: Ng, Razak *et al.* (2006); Ng, Patil *et al.* (2006); Razak *et al.* (2009); Ngaini *et al.* (2009). For details of hydrogen-bond motifs, see: Bernstein *et al.* (1995). For the stability of the temperature controller used in the data collection, see: Cosier & Glazer, 1986.



Experimental

Crystal data

$C_{25}H_{32}O_3$
M_r = 380.51
Monoclinic, $P2_1/c$
a = 21.2700 (4) Å
b = 7.6779 (2) Å
c = 13.2330 (3) Å
β = 101.720 (1)°
V = 2116.01 (8) Å^3
Z = 4
Mo $K\alpha$ radiation
μ = 0.08 mm^{-1}
T = 100 K
0.44 × 0.28 × 0.04 mm

Data collection

Bruker APEXII CCD area-detector diffractometer
Absorption correction: multi-scan (*SADABS*; Bruker, 2005)
T_{min} = 0.967, T_{max} = 0.997
25687 measured reflections
6221 independent reflections
4014 reflections with $I > 2\sigma(I)$
R_{int} = 0.056

Refinement

$R[F^2 > 2\sigma(F^2)]$ = 0.058
$wR(F^2)$ = 0.165
S = 1.04
6221 reflections
258 parameters
H atoms treated by a mixture of independent and constrained refinement
$\Delta\rho_{max}$ = 0.37 e Å^{-3}
$\Delta\rho_{min}$ = −0.26 e Å^{-3}

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

D—H···A	D—H	H···A	D···A	D—H···A
O1—H1*O1*···O2	0.91 (2)	1.68 (2)	2.526 (2)	152 (2)
C15—H15*A*···O3^{i}	0.93	2.48	3.406 (2)	174
C20—H20*B*···*Cg*1^{ii}	0.97	2.85	3.702 (2)	147
C22—H22*A*···*Cg*1^{iii}	0.97	2.84	3.712 (2)	149
C16—H16*A*···*Cg*2^{iii}	0.97	2.87	3.596 (2)	132

Symmetry codes: (i) $x, -y+\frac{1}{2}, z+\frac{1}{2}$; (ii) $-x+1, -y, -z+1$; (iii) $-x+1, -y+1, -z+1$. *Cg*1 and *Cg*2 are the centroids of the C1–C6 and C10–C15 rings, respectively.

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: TK2402).

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Bruker (2005). *APEX2*, *SAINT*, and *SADABS*. Bruker AXS Inc., Madison, Wisconsin, USA.

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