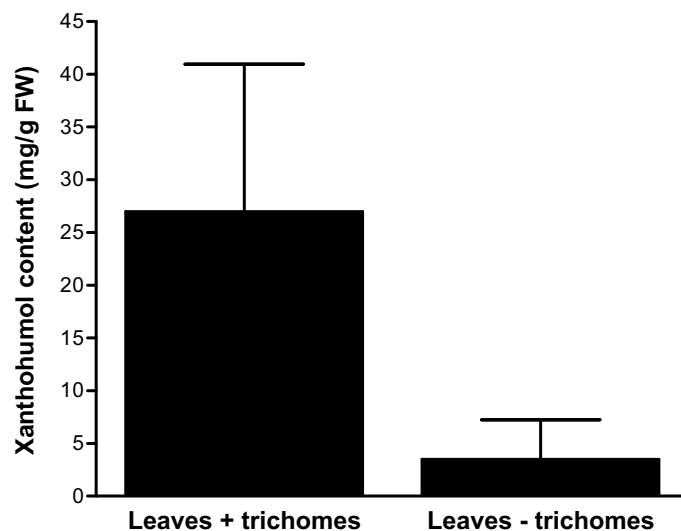


Supplemental Data. Nagel et al. (2008). EST analysis of hop (*Humulus lupulus* L.) glandular trichomes identifies an O-methyltransferase that catalyzes the biosynthesis of xanthohumol.



**Supplemental Figure 1.** Xanthohumol levels in leaves with intact glandular trichomes and with trichomes removed. Young leaves were sampled from greenhouse-grown *H. lupulus* 'Taurus' plants and analyzed by HPLC. Trichomes were removed using abrasion. Values represent mean  $\pm$  standard deviation (n=3).

**Supplemental Table 1.** Summary of hop lupulin gland ESTs.

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Number of ESTs for each cDNA Library:	HLUPJN1 (Taurus)	1 990
	HLUPLC (Taurus normalized)	3 070
	HLUPTR2CH (Nugget)	1 728
	HLUPTR3CH (Nugget normalized)	5 280
Total number of ESTs		12 070
Number of high-quality ESTs <sup>a</sup>		10 581
Average length of high-quality ESTs (bp)		514
Number of contigs		1 422
Number of singletons		3 531
Number of putative unique transcripts <sup>b</sup>		4 953
Average length of putative unique transcripts (bp)		615
Total length of putative unique transcripts (Mbp)		3.05
Number of annotated putative unique transcripts <sup>c</sup>		3 818 (77%)

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<sup>a</sup> After removal of vector, low-quality and polyA/T regions, and simple repeats.

<sup>b</sup> Number of unique transcripts is the total number of contigs and singletons.

<sup>c</sup> By blastx comparison to nr protein database (e-value cutoff of  $10^{-5}$ ).

**Supplemental Table 2.** <sup>1</sup>H-NMR spectra of xanthohumol and 4-*O*-methylxanthohumol (δ in ppm, J in Hz)

	Xanthohumol	4- <i>O</i> -Methylxanthohumol
H- α	7.75, 1H (d, 15.5)	7.80, 1H (d, 15.6)
H- β	7.66, 1H (d, 15.5)	7.69, 1H (d, 15.6)
H-2, 6	7.57, 2H (d, 8.7)	7.67, 2H (d, 8.4)
H-3, 5	6.83, 2H (d, 8.7)	7.01, 2H (d, 8.4)
H-5'	6.07, 1H (s)	6.07, 1H (s)
H-1''	3.12, 2H (d, 7.1)	3.12, 2H (d, 6.9)
H-2''	5.12, 1H (t, 7.1)	5.12, 1H (t, 6.9)
H-4''	1.59, 3H (s)	1.59, 3H (s)
H-5''	1.68, 3H (s)	1.68, 3H (s)
4-OH	10.06, 1H (s)	-
2'-OH	14.63, 1H (s)	14.55, 1H (s)
4'-OH	10.56, 1H (s)	10.62, 1H (s)
6'-OCH <sub>3</sub>	3.85, 3H (s)	3.85, 3H (s)
4-OCH <sub>3</sub>	-	3.80, 3H (s)