**Supplementary Material**

# Stereoisomeric Analysis of 6,10,14-Trimethylpentadecan-2-ol and the Corresponding Ketone in Wing Extracts from African *Bicyclus* Butterfly Species

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## Experimental

*General Procedures* Commercially available chemicals were used without further purification. (3*R*)-3,7-dimethyloct-6-enoic acid and other commercially available chemicals were obtained from Aldrich and analyzed by GC to be of > 99.9 % chemical purity. Amano PS was obtained from Amano Pharmaceutical Co. Ltd., Nagoya, Japan. The lipase was stored at 4 °C over silica gel. *Candida rugosa* lipase-type VII (CRL) was purchased from Sigma Aldrich. Lot: 056K1490, activity: 835 units / mg solid used in the immobilization. 2,2-Dimethyl-1-propanol was purchased from Sigma Aldrich and *iso*-octane was purchased from Fluka and used without further purification. Accurel EP 100 (200-350 μm) was a gift by Accurel systems, AKZO Faser AG, Obernburg, Germany. Dry $Et_2O$ was distilled from $LiAlH_4$, and the alkyl halides were distilled prior to use and stored under argon. In the coupling reactions with organolithium reagents, the solvents were degassed by argon for about 1 h prior to use. Li metal was washed with *n*-heptane and was flattened by hammering and cut in very thin pieces prior to use. Preparative liquid chromatography (LC) was performed on normal phase silica gel (Merck 60, 230−400 mesh, 0.040−0.063 mm, Merck, Germany) employing an increasing concentration of distilled ethyl acetate in distilled cyclohexane (0 to 100%) as eluent. To monitor the progress of the reactions, thin layer chromatography (TLC) was performed on silica gel plates (Merck 60 $F_{254}$, pre-coated aluminium foil) eluted with ethyl acetate (20 - 40% ethyl acetate in cyclohexane) and developed by spraying with vanillin in sulfuric acid and heated at 120 °C. NMR spectra were recorded on a Bruker DMX 250 (250 MHz $^1H$ and 62.9 MHz $^{13}C$) and Bruker Avance 500 (500 MHz $^1H$, 125.8 MHz $^{13}C$) spectrometer using $CDCl_3$ as solvent and TMS as internal reference. Optical rotations were measured on a Perkin Elmer 241 polarimeter using a 1-dm cell. Mass spectra were recorded on a Saturn 2000 instrument, operated in EI mode, coupled

to a Varian 3800 GC instrument with a 30 m × 0.25 mm I.D. capillary column coated with DB-1 (Durabond), $d_f$ = 0.25 μm, carrier gas $N_2$, 12 psi, split ratio 1:50. Purity of products and in some cases conversions of reactions were monitored by a 30 m × 0.32 mm I.D. capillary column coated with EC-1 (Varian), $d_f$ = 0.25 μm, carrier gas $N_2$, 12 psi, split ratio 1:50. Enantioselective GC analyses were carried out on a chiral β-dex225 column (30m x 0.25 mm, $d_f$ = 0.25; Supelco) operated isothermally at 70 °C.

**Synthesis of (2*R*)-6-Methoxy-2-methylheptyl-sulfonylbenzene as building block 2**

*6-Methylhept-5-en-2-ol* 6-Methylhept-5-en-2-one (11.7 ml, 92.8 mmol) in $Et_2O$ (100 ml) was added dropwise to a suspension of $LiAlH_4$ (1.39 g, 37.6 mmol) in $Et_2O$ (500 ml) at 0 °C and the reaction was stirred for 3 h. $H_2O$ (10 ml) and HCl (2M, 30 ml) were added to quench the reaction. The aqueous phase was extracted with $Et_2O$ (4 × 25 ml) and the combined organic phases were washed with HCl (2M, 2 × 20 ml) and brine (sat.aq., 20 mL), dried over $MgSO_4$ (anhydr.), and the solvent was removed under reduced pressure, which resulted in 12.6 g (quantitative yield, 99.4 % pure). $^1$H-NMR ($CDCl_3$): 5.13 (tt, 1H, *J* = 1.5 and 7 *Hz*), 3.81 (m, 1H), 2.07 (m, 2H), 1.69 (s, 3H), 1.63 (s, 3H), 1.51-1.64 (m, 2H), 1.19 (d, 3H, *J* = 6.3 *Hz*). Analytical data were similar to data in Charlton et al (1980).

*6-Methoxy-2-methylhept-2-ene* 6-Methylhept-5-en-2-ol (0.5 g, 3.9 mmol) was added dropwise to a suspension of NaH (0.43 g, 18 mmol) in THF (12 ml) at 0 °C. After 1.5 h, methyl iodide (3.4 g, 24 mmol) was added dropwise during 30 min at 0 °C, and the mixture was stirred for 4 h. Methanol (5 ml) and $Et_2O$ (15 ml) were added, followed by HCl (0.1M) until pH 6 was reached. $Et_2O$ (50 ml) was added and the organic phase was separated from the aqueous phase. The organic layer was washed with $H_2O$ (3 × 15 ml), dried over $MgSO_4$ (anhydr.), and the solvent was removed under reduced pressure resulting in 0.61 g of the product (quantitative yield, >99 % pure). $^1$H-NMR ($CDCl_3$): 5.10 (tt, 1H, *J* = 1.5, 7 *Hz*), 3.31

(s, 3H), 3.28 (q, 2H, *J* = 6 *Hz*), 2.03 (m, 2H), 1.61 (s, 3H), 1.59-1.36 (m, 1H), 1.13 (d, 3H, *J* = 5 *Hz*). Analytical data were similar to data in Masaki et al (1985).

*(E)-6-Methoxy-2-methylhept-2-en-1-ol* 6-Methoxy-2-methylhept-2-ene (12.06 g, 76.3 mmol) was added dropwise to a mixture of *tert*-butyl hydroperoxide (81 ml, 590 mmol, 70 % solution), $SeO_2$ (0.37 g, 3.33 mmol), salicylic acid (2.3 g, 16.65 mmol) in DCM (70 ml), and after 24 h additional *tert*-butyl hydroperoxide (81 ml, 590 mmol, 70 % solution) was added. After 24 h of stirring, the reaction was quenched by addition of MeOH (100 ml) and $NaBH_4$ (10 g) in NaOH (0.2 M, 100 ml). After 1.5 h, $Et_2O$ (150 ml) and $H_2O$ (150 ml) were added, and the aqueous phase was extracted with $Et_2O$ (2 × 400 ml) and the combined organic layer was washed with brine (sat.aq., 2 × 200 ml), dried over $MgSO_4$ (anhydr.), and the solvent was removed. LC purification resulted in 10.49 g of the title compound 99% pure with a yield of 87 %. $^1$H-NMR ($CDCl_3$): 5.41 (tt, 1H, *J* = 1.5, 7 *Hz*), 4.01 (s, 2H), 3.31 (s, 3H), 3.30 (m, 1H), 2.10 (m, 2H), 1.68 (m, 3H), 1.64-1.55 (m, 3H), 1.48-1.42 (m, 2H), 1.14 (d, 3H, *J* = 6.5 Hz).

*6-Methoxy-2-methylheptan-1-ol* Ra-Ni (3 Pasteur pipettes) was added to (*E*)-6-methoxy-2-methylhept-2-en-1-ol (10.8 g, 68 mmol) in ethanol (150 ml), and the system was evacuated twice and stirred overnight under $H_2$ (g) at 1 atm. The reaction mixture was filtered through Celite. The solvent was removed under reduced pressure, and the crude product was diluted with $Et_2O$ (100 ml), dried over $MgSO_4$ (anhydr.), and the solvent was removed under reduced pressure giving 11.59 g of the saturated alcohol (quantitative yield, > 99 % pure). The identity of the title compound was confirmed by $^1$H-NMR and used in the next step without further analysis.

*6-Methoxy-2-methylheptanoic acid* Jones reagent (63 ml) was added dropwise to a solution of 6-methoxy-2-methylheptan-1-ol (11.59 g, 65 mmol) in acetone (500 ml) at 0 °C. After 2 h, *iso*-PrOH (20 ml) was added, and the solvent was removed under reduced pressure. The crude

product was dissolved in $Et_2O$ (50 ml), and the organic phase was washed with $H_2O$ (2 × 10 ml), dried over $MgSO_4$ (anhydr.), and the solvent was removed under reduced pressure. The crude product was purified with LC and resulted in 8.84 g (78 % yield, >99 % pure). $^1$H-NMR ($CDCl_3$): 3.31 (s, 3H), 3.30 (m, 1H), 2.46 (m, 1H), 1.58-1.32 (m, 6H), 1.19 (d, 3H, *J* = 7 *Hz*), 1.12 (d, 3H, *J* = 6 *Hz*). $^{13}$C-NMR ($CDCl_3$): 181.8, 76.64, 55.9, 39.2, 36.1, 33.6, 23.0, 19.0, 16.9.

*(2R)-6-Methoxy-2-methylheptanoic acid* To 6-methoxy-2-methylheptanoic acid (8.53 g, 48.5 mmol), 2,2-dimethyl-1-propanol (4.31 g, 48.5 mmol) and dodecane (1.97 g, 11.4 mmol) as internal standard in *iso*-octane (280 ml) was added the salt pair $Na_2SO_4$ (8.8 g, 62.1 mmol) and $Na_2SO_4$ × $10H_2O$ (10.0 g, 31.1 mmol) to maintain a water activity ($a_w$) of 0.76. The enantioselective esterification was started by addition of 3.95 g of CRL according to Sabbani et al (2006). After stirring at 20 ºC, the reactions were stopped at 30% conversion by filtering off with Celite and washing the enzyme/Celite with several portions of $Et_2O$. The remaining substrate acid was separated from the product ester via extraction with $Na_2CO_3$ (4 × 10 ml). The water phase was acidified with HCl, and the acid extracted into $Et_2O$ (3 × 15 ml) and dried with $MgSO_4$ (anhydr.). This yielded 5.86 g of pure remaining (2*R*)-6-methoxy-2-methylheptanoic acid used below in the next step below after confirming the identity by $^1$H-NMR and the optical activity (neat [α]*58920*=−5.9°). The enantioselective esterification also gave 5.99 g of the (*S*)-ester isolated from the remaining $Et_2O$ phase after drying with $MgSO_4$ (anhydr.). The ester was not analyzed further and not used in the rest of the synthesis.

*(2R)-6-Methoxy-2-methylheptan-1-ol* $LiAlH_4$ (0.55 g, 14.67 mmol) was added to (2*R*)-6-methoxy-2-methylheptanoic acid (5.8 g, 35.3 mmol) at 0 °C and stirred for 2 h. $H_2O$ (20 ml) and HCl (2M, 60 ml) were added, and the aqueous phase was extracted with $Et_2O$ (2 × 100 ml). The combined organic layer was dried over $MgSO_4$ (anhydr.), and the solvent was removed under reduced pressure resulting in 4.44 g (yield of 78.6 %, 99.5 % pure). $^1$H-NMR

($CDCl_3$): 3.45 (m, 2H), 3.31 (s, 3H), 1.60-1.40 (m, 2H), 1.13 (d, 3H, *J* = 6.5 *Hz*), 0.92 (d, 3H, *J* = 6.8 *Hz*). $^{13}$C-NMR ($CDCl_3$): 77.2, 68.7, 56.3, 36.9, 36.2, 33.6, 23.2, 19.4, 16.9. [α]$_{58920}$=+3.2°. GC Analysis on the chiral β-dex225 column showed the (2*R*)-isomers (75 % relative area) at 282.01 and 292.14 min, and the (2*S*)-isomers (25% relative area) at 303.95 and 311.62 min.

*(2R)-6-Methoxy-2-methylheptyl 4-methylbenzenesulfonate* *p*-Toluenesulfonyl chloride (2.38 g, 12.5 mmol) was added in small portions to (2*R*)-6-methoxy-2-methylheptan-1-ol (1 g, 6.25 mmol) and pyridine (1.48 g, 18.75 mmol) in DCM (20 ml) at 0 °C. The reaction was stirred overnight, and $H_2O$ (10 ml) and $Et_2O$ (40 ml) were then added. The organic phase was washed with 10% $Na_2CO_3$ (10% aq., 3 × 10 ml), and brine (sat.aq., 10 ml), dried over $MgSO_4$ (anhydr.), and the solvent removed under reduced pressure. The product was purified with LC and Kügelrohr distillation resulting in 1.715 g of the sulfonate (quantitative yield, 95% pure). $^1$H-NMR ($CDCl_3$): 7.79 (d, 2H, *J* = 8.3 *Hz*), 7.34 (d, 2H, *J* = 8.5 *Hz*), 3.83 (m, 2H), 3.33-3.20 (m, 1H), 3.31 (s, 3H), 2.45 (s, 3H), 1.78 (m, 1H), 1.50-1.10 (m, 1H), 1.09 (d, 3H, *J* = 6.3 Hz), 0.89 (d, 3H, *J* = 6.8 *Hz*). $^{13}$C-NMR ($CDCl_3$): 144.5, 129.9, 127.9, 75.2 55.9, 36.4, 32.6, 22.5, 21.6, 19.1, 16.4.

*(2R)-1-Iodo-6-methoxy-2-methylheptane* (2*R*)-6-Methoxy-2-methylheptyl 4-methylbenzene-sulfonate (0.440 g, 1.42 mmol) was added to NaI (1.02 g, 6.82 mmol) in DMF (5 ml), and the reaction mixture was refluxed for 1.5 h. $H_2O$ (3 ml) was added, and the aqueous phase was extracted with $Et_2O$ (3 × 15 ml). The combined organic phase was washed with $Na_2S_2O_3$ (10% aq., 2 × 3 ml) and brine (sat.aq., 2 × 3 ml), dried over $MgSO_4$ (anhydr.), and the solvent was removed under reduced pressure. The product was purified with LC and Kügelrohr distillation resulting in 0.139 g (36.5 % yield) of product that was used in the next step after confirming the structure by $^1$H-NMR.

*{[(2R)-6-Methoxy-2-methylheptyl]sulfonyl}benzene* $NaSO_2Ph$ (0.41 g, 2.49 mmol) was added to (2*R*)-1-iodo-6-methoxy-2-methylheptane (0.48 g, 1.78 mmol) in DMF (10 ml), and the reaction mixture was stirred for 2 d. The reaction mixture was poured into brine and extracted with $Et_2O$ (3 × 20 ml). The combined organic layer was washed with $H_2O$ (10 ml) and brine (sat.aq., 10 ml), dried over $MgSO_4$ (anhydr.), and the solvent was removed under reduced pressure. The product was purified by LC and Kügelrohr distillation resulting in 0.364 g (81 % yield) of the pure title compound. $^1$H-NMR ($CDCl_3$): 7.93 (d, 2H, *J* = 9.7 *Hz*), 7.65 (t, 1H, *J* = 7.5 *Hz*), 7.56 (t, 2H, *J* = 8.5 *Hz*), 3.28 (s, 3H), 3.08 (dd, 1H, *J* = 6, 18 *Hz),* 2.93 (dd, 1H, *J* = 9.5, 19 *Hz*), 2.10 (m, 1H), 1.64 (s, 1H), 1.47-1.20 (m, 6H), 1.08 (m, 6H). $^{13}$C-NMR ($CDCl_3$): 140.2, 133.5, 129.3, 127.9, 62.5, 56.9, 36.8, 36.2, 28.6, 22.2, 19.8, 18.9.

**Synthesis of (3*R*)-1-iodo-3,7-dimethyloctane as building block 3**

*(3R)-3,7-Dimethyloct-6-ene-1-ol* Following the approach used by Mori et al (1991), $LiAlH_4$ (3.70 g, 97.4 mmol) was added during 1 h to $CoCl_2$ (6.86 g, 51.2 mmol) in THF (250 ml) at −70 °C. (3*R*)-3,7-dimethyloct-6-enoic acid (3.0 g, 17.65 mmol) in THF (60 ml) were added dropwise to the above solution during 45 min, the reaction was stirred at −70 °C for an additional hour and left stirring overnight. Toluene (30 ml) was added, and the reaction mixture was stirred for 2 d and then $H_2O$ (60 ml) and HCl (1M, 60 ml) were added to quench the reaction. The aqueous phase was extracted with $Et_2O$ (6 × 100 ml), the combined organic layer was washed with brine (sat.aq., 3 × 20 ml), dried over $MgSO_4$ (anhydr.), and the solvent was removed under reduced pressure. This resulted in 2.8 g of a crude mixture consisting of (3*R*)-3,7-dimethyloctan-1-ol (55 %) and (3*R*)-3,7-dimethyloct-6-en-1-ol (42 %). This mixture was used in the next step without further analysis and purification.

*(3R)-3,7-Dimethyloctan-1-ol;* Pd-C (a spatula end) was added to (3*R*)-3,7-dimethyloct-6-en-1-ol/(3*R*)-3,7-dimethyloct-6-en-1-ol (2.8 g, 17.4 mmol) diluted in EtOAc (20 mL). The system

was evacuated with $H_2$ (g) twice, and the reaction was stirred for 24 h. The reaction mixture was filtered and the collected filtrate was washed with $Na_2CO_3$ (10% aq., 5 ml), dried over $MgSO_4$ (anhydr.), and the solvent was removed under reduced pressure resulting in 2.28 g (83 % yield) of the saturated alcohol. Analytical data were similar to that in Mori et al (1991).

*(3R)-3,7-Dimethyloctyl 4-methylbenzenesulfonate* *p*-Toluenesulfonyl chloride (4.2 g, 22.03 mmol) was added to a solution of (3*R*)-3,7-dimethyloctan-1-ol (2.28 g, 14.4 mmol) and pyridine (10 ml) in DCM (30 ml), and the mixture was stirred overnight. $Et_2O$ (50 ml) was added to dilute the reaction mixture, and the organic phase washed with HCl (1M, 3 × 10 ml), $NaHCO_3$ (10% aq., 2 × 5 ml) and brine (sat.aq., 5 ml), dried over $MgSO_4$ (anhydr.), and the solvent was removed under reduced pressure resulting in 3.14 g (70 % yield) of the title compound which was used without further purification. $^1$H-NMR ($CDCl_3$): 7.79 (d, 2H, *J* = 8.3 *Hz*), 7.34 (d, 2H, *J* = 8.3 *Hz*), 4.06 (dt, 2H, *J* = 1, 6.25 *Hz*), 2.45 (s, 3H), 1.73-1.08 (m, 11H), 0.85 (d, 6H, *J* = 6.5 *Hz*), 0.80 (d, 3H, *J* = 6.5 *Hz*). $^{13}$C-NMR ($CDCl_3$): 144.6, 129.8, 127.9, 69.1, 39.1, 36.8, 35.7, 29.2, 27.9, 24.5, 22.6, 21.6, 19.2.

*(3R)-1-Iodo-3,7-dimethyloctane* (3*R*)-3,7-Dimethyloctyl 4-methylbenzenesulfonate (3.14 g, 10.06 mmol) was added to NaI (6.6 g, 44 mmol) in DMF (55 ml) and refluxed overnight. $H_2O$ (20 ml) was added, and the aqueous phase was extracted with $Et_2O$ (5 × 10 ml). The combined organic layer was washed with HCl (1M, 10 ml), $Na_2S_2O_3$ (10% aq., 2 × 10 ml) and brine (sat.aq., 10 ml), dried over $MgSO_4$ (anhydr.), and the solvent was removed under reduced pressure. The product was purified with LC and Kügelrohr distillation and resulted in 0.44 g (16 % yield, 99 % pure). $^1$H-NMR ($CDCl_3$): 3.27-3.23 (m, 1H), 3.19-3.15 (m, 1H), 1.91-1.84 (m, 1H), 1.68-1.61 (m, 1H), 1.57-1.48 (m, 2H), 1.36-1.07 (m, 6H), 0.87 (d, 3H, *J* = 6.5 *Hz*). $^{13}$C-NMR ($CDCl_3$): 41.0, 39,2, 33.9, 27.9, 24.5, 22.6, 18.7, 5.4. Analytical data similar to that in Chen et al (1996).

**Synthesis of (2*R*/*S*,6*S*,10*R*)-6,10,14-trimethylpentadecan-2-ol (1) by coupling of building block 2 and 3**

*(6R,10R)-2-Methoxy-6,10,14-trimethyl-7-pentadecanyl-sulfonylbenzene* A similar method to those described for different substrates in Nakamura and Mori (2000) and Shibata et al (2002) was used. BuLi (1.6 M in hexane, 0.45 ml, 0.72 mmol) was added slowly to (2*R*)-6-methoxy-2-methylheptyl-sulfonylbenzene (0.10 g, 0.35 mmol) and DMPU (0.6 ml) in THF (4 ml) at −80 °C. After addition, the reaction mixture was allowed to reach −40 °C and was stirred at this temperature for 1 h. The reaction mixture was cooled to −80 °C and (3*R*)-1-iodo-3,7-dimethyloctane (0.147 g, 0.55 mmol) in THF (1 ml) was added dropwise and the reaction was stirred overnight. $NH_4Cl$ (sat. aq., 2 ml) was added, and the aqueous phase was extracted with EtOAc (5 × 10 ml). The combined organic layers were washed with brine (sat.aq., 5 ml), dried over $MgSO_4$ (anhydr.), and the solvent was removed under reduced pressure. The product was purified by Kügelrohr distillation and resulted in 0.113 g (76 % yield) of product. $^1$H-NMR ($CDCl_3$): 7.93 (d, 2H, *J* = 8 *Hz*), 7.66 (t, 1H, *J* = 8.5 *Hz*), 7.58 (t, 2H, *J* = 7.5 *Hz*), 3.30 (s, 3H), 3.27-3.23 (m, 1H), 3.09 (dd, 1H. *J* = 4.5, 14 *Hz*), 2.94 (dd, 1H, *J* = 7.5, 14 *Hz),* 1.91-1.84 (m, 1H), 1.68-1.61 (m, 1H), 1.57-1.48 (m, 2H), 1.09 (d, 3H, *J* = 6 *Hz*), 1.08 (d, 3H, *J* = 6.5 *Hz*). $^{13}$C-NMR ($CDCl_3$): 140.2, 133.5, 129.3, 127.9, 76.5, 62.5, 55.9, 36.8, 36.2, 28.6, 22.2, 19.9, 19.0.

*(6S,10R)-2-Methoxy-6,10,14-trimethylpentadecane* Lithium (150 mg) was cut into pieces and added to $EtNH_2$ (10 ml) at −80 °C and was stirred for 45 min. (6*R*,10*R*)-2-Methoxy-6,10,14-trimethyl-7-pentadecan-sulfonyl}benzene (0.113 g) in THF (6 ml) was added dropwise at −80 °C to the solution above. After 2 h THF (10 ml) and $NH_4Cl$ (sat.aq., 12 ml) were added. The aqueous phase was extracted with heptane (5 × 10 ml), the combined organic layers were washed with brine (sat.aq., 5 ml) and $H_2O$ (5 ml), dried over $MgSO_4$ (anhydr.), and the

solvent was removed under reduced pressure resulting in 72 mg (95 % yield, 80 % pure) that was used in the next step without further purification or analysis.

*(6S,10R)-6,10,14-Trimethylpentadecan-2-one* (6*S*,10*R*)-2-methoxy-6,10,14-trimethylpentadecane from above was diluted with acetonitrile (1.9 ml), $H_2O$ (2.8 ml), and $CCl_4$ (0.9 ml). $NaIO_4$ (1.0 g, 4.67 mmol) and $RuCl_3$ (spatula tip) were added and after 24 h additional $NaIO_4$ (0.5 g, 2.33 mmol), $RuCl_3$ (spatula tip) and acetonitrile (1 ml) were added. The reaction mixture was stirred for an additional 24 h when $Et_2O$ (10 ml) and $H_2O$ (10 ml) were added. The aqueous phase was extracted with $Et_2O$ (4 ×10 ml), the combined organic layer was washed with HCl (1M, 10 ml), dried over $MgSO_4$ (anhydr.), and the solvent was removed under reduced pressure. The product was purified with LC to give 63 mg of the product (quantitative yield) which was checked by $^1$H-NMR and then used immediately in the next step without further purification or analysis. The analytical data were similar to data in Nam et al (2007) and Suga et al (1989).

*(2R/S,6S,10R)-6,10,14-Trimethylpentadecan-2-ol* (6*S*,10*R*)-6,10,14-Trimethylpentadecan-2-one from above was diluted in EtOAc (3 ml) and $LiAlH_4$ (40 mg, 1.05 mmol) was added. $H_2O$ (1 ml) and HCl (1M, 1 ml) was added after 1 h and the aqueous phase was extracted with $Et_2O$ (3 × 10 ml), the combined organic layer was washed with HCl (1M, 5 ml) and brine (sat.aq., 5 ml), dried over $MgSO_4$ (anhydr.) and the solvent was removed under reduced pressure resulting in 57 mg of the (2*R*/*S*,6*S*,10*R*)-6,10,14-trimethylpentadecan-2-ol (**1**) in >99 % purity (99 % yield). This reference mixture **1** was analyzed and used as reference as described above. Analytical data were similar to data in Mori et al (1991); Nam et al (2007); and Suga et al (1989).

**Synthesis of (2*S*,6*R*/*S*,10*R*/*S*)-6,10,14-trimethylpentadecan-2-ol, (2*R*,6*R*/*S*,10*R*/*S*)-6,10,14-trimethylpentadecan-2-ol, (2*S*,6*R*,10*R*)-6,10,14-trimethylpentadecan-2-ol and (2*R*,6*R*,10*R*)-6,10,14-trimethylpentadecan-2ol**

*(2S,6R/S,10R/S)- and (2R,6R/S,10R/S)-6,10,14-trimethylpentadecan-2-ol* was synthesized from (2*E*,7*R/S*,11*R/S)*-3,7,11,15-tetramethyl-2-hexadecen-1-ol (phytol) following the protocol in Nieberding et al (2008).

*(2S,6R,10R)-6,10,14-trimethylpentadecan-2-ol and (2R,6R,10R)-6,10,14-trimethylpentadecan-2ol* were synthesized according to a published method from (2*E*,7*R*,11*R*)-phytol resulting in pure stereoisomers of the two title compounds (Nieberding et al. 2008).

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