Supporting Information

Substituted *trans*-Stilbenes, Including Analogs of the Natural Product Resveratrol, Inhibit the Human Tumor Necrosis Factor Alpha-induced Activation of Transcription Factor Nuclear Factor-kappa B

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CONTENTS: Supporting information includes general synthetic procedures, list of known compounds that were included in this study along with references.

Unless otherwise noted all reagents were obtained from commercial sources and used without further purification. All compounds that were isolated were greater than 90% pure by ^{1}H and/or ^{13}C NMR. Column chromatographic separations were performed using EM Science type 60 silica gel (230-400 mesh). Melting points were determined on a Thomas Hoover capillary melting point apparatus and are uncorrected. NMR spectra were recorded on a Bruker AC250 (250 MHz) NMR spectrometer in $CDCl_3$ unless otherwise noted. Chemical shifts are reported in ppm (δ) relative to $CHCl_3$ at 7.24 ppm for ^{1}H NMR and 77.0 for ^{13}C NMR. High resolution mass spectra were performed at the Mass Spectrometry Facility, University of New Mexico.

General method for the preparation of substituted benzyl phosphonic acid diethyl esters.

Substituted benzyl bromide was heated with excess triethylphosphite at 140ºC until the evolution of bromoethane had ceased and complete dissolution occurred. The remaining triethylphosphite was then removed by concentration of the solution *in vacuo* to afford the product.

General method for the preparation of MOM protected aldehydes.

To a suspension of hexane rinsed sodium hydride (1.5 equivalents) in dimethyl formamide is added a solution of the appropriate aldehyde (1 equivalent) in dimethyl formamide. After stirring 2 hours at room temperature dichloromethylmethyl ether is added and the solution is stirred an additional 3 hours at room temperature. The solution is quenched by pouring over ice water and extracted with ether. The ether extracts are washed with 1M sodium hydroxide, saturated sodium chloride and dried with magnesium sulfate, filtered and evaporated to give a crude oil that is distilled bulb to bulb to afford the product as a solid.

(*E*)-3,4-Dimethoxystilbene (4a). mp 108-109 °C [lit.[1] 112-113 °C].

(*E*)-4-Methoxystilbene (4b). mp 134-135 °C [lit.[2] 135-136 °C].

(*E*)-4-Chlorostilbene (4c). mp 129-130 °C [lit.[3] 129-131 °C].

(*E*)-4-Methylstilbene (4d). mp 114-116 °C [lit.[3] 118-120 °C].

(*E*)-4-Cyanostilbene (4e). mp 116-117 °C [lit.[3] 115-118 °C].

(*E*)-3,5-Dimethoxystilbene (4f). mp 53-55 °C [lit.[4] 54-55 °C].

(*E*)-3-Chlorostilbene (4h). mp 74-76 °C [lit.[5] 71-72.5 °C].

(*E*)-3-Methylstilbene (4i). mp 50-51 °C [lit.[6] 48-49 °C].

(*E*)-2-Chlorostilbene (4j). mp 64-66 °C [lit.[7] 37-38 °C].

(*E*)-4-Ethoxystilbene (4k). mp 124-126 °C [lit.[8] 77-78 °C].

(*E*)-4-Hydroxystilbene (4l). mp 183-185 °C [lit.[9] 188 °C].

(*E*)-4-Fluorostilbene (4m). mp 123-124 °C [lit.[10] 124 °C].

(*E*)-3-Fluorostilbene (4n). mp 74-76 °C [lit.[11] 70-72 °C].

(*E*)-2,3-Dimethoxystilbene (4o). mp 37-39 °C [lit.[12] 38-39 °C].

(*E*)-2-Fluorostilbene (4p). mp 103-105 °C [lit.[13] 102-103 °C].

(*E*)-4-Hydroxy-3-methoxystilbene (4q). mp 133-134 °C [lit.[9] 138 °C].

(*E*)-3-Methoxystilbene (4r). mp 34-35 °C [lit.[2] 34-35 °C].

(*E*)-3-Hydroxystilbene (4t). mp 119-121 °C [lit.[14] 119-120 °C].

(*E*)-2,4-Dimethoxystilbene (4u). mp 64-65 °C [lit.[15] 64.5-65 °C].

(*E*)-2-Methylstilbene (4v). mp 35-36 °C [lit.[2] 28-29 °C].

(*E*)-3-Trifluoromethylstilbene (4w). mp 67-68 °C [lit.[16] 66-67 °C].

(*E*)-4-Trifluoromethylstilbene (4x). mp 133-134 °C [lit.[2] 134-135 °C].

(*E*)-2,5-Dimethoxystilbene (4y). oil; ^{1}H NMR: δ 3.81 (s, 3H), 3.83 (s, 3H), 6.80 (m, 2H), 7.09 (d, 1H, J = 16.48 Hz), 7.16 (d, 1H, J = 2.38 Hz), 7.25 (m, 1H), 7.34 (t, 2H, J = 7.35 Hz), 7.47 (d, 1H, J= 16.49 Hz), 7.53 (d, 2H, J = 7.15 Hz).

(*E*)-2,4,6-Trimethylstilbene (4aa). mp 56-57 °C [lit.[17] 49-50 °C].

(*E*)-2-Methoxystilbene (4bb). mp 58-59 °C [lit.[2] 56-57 °C].

(*E*)-4-*N,N*-Dimethylaminostilbene (4cc). mp 144-146 °C [lit.[18] 150 °C].

(*E*)-3,4-Dihydroxystilbene (4ee). mp 167-168 °C [lit.[19] 168-169 °C].

(*E*)-3,4,5-Trimethoxystilbene (4ff). mp 107-108 °C [lit.[20] 105-106 °C].

(*E*)-2,3,4-Trimethoxystilbene (4gg). mp 80-83 °C [lit.[20] 79-82 °C].

(*E*)-3,4,4'-Trimethoxystilbene (6a). mp 136-138 °C [lit.[4] 136-138 °C].

(*E*)-4,4'-Dimethoxystilbene (6b). mp 212-213 °C [lit.[2] 214-216 °C].

(*E*)-4-Chloro-4'-methoxystilbene (6c). mp 181-183 °C [lit.[4] 181-184 °C].

(*E*)-4'-Methoxy-4-methylstilbene (6d). mp 160-162 °C [lit.[21] 166-167 °C].

(*E*)-4-Cyano-4'-methoxystilbene (6e). mp 141-143 °C [lit.[22] 141-142 °C].

(*E*)-3,4',5-Trimethoxystilbene (6f). mp 53-55 °C [lit.[4] 53-56 °C].

(*E*)-3-Chloro-4'-methoxystilbene (6h). mp 93-94 °C [lit.[21] 96 °C].

(*E*)-4'-Methoxy-3-methylstilbene (6i). mp 110-111 °C [lit.[21] 98 °C].

(*E*)-2-Chloro-4'-methoxystilbene (6j). mp 52-53 °C [lit.[23] 59-60 °C].

(*E*)-4-Ethoxy-4'-methoxystilbene (6k). mp 194-195 °C [lit.[24] 165-167 °C].

(*E*)-3,4,4',5-Tetramethoxystilbene (6l). mp 157-159 °C [lit.[20] 152-155 °C].

(*E*)-4-Fluoro-4'-methoxystilbene (6m). mp 148-150 °C [lit.[25] 147-149 °C].

(*E*)-3-Fluoro-4'-methoxystilbene (6n). mp 108-110 °C [lit.[11] 108-110 °C].

(*E*)-2,3,4'-Trimethoxystilbene (6o). mp 70-72 °C [lit.[26] 73-74 °C].

(*E*)-2-Fluoro-4'-methoxystilbene (6p). mp 100-101 °C [lit.[13] 102-103 °C].

(*E*)-2,4,4',5-Tetramethoxystilbene (6q). mp 106-107 °C [lit.[27] 110 °C].

(*E*)-3,4'-Dimethoxystilbene (6r). mp 107-108 °C [lit.[26] 107-108 °C].

(*E*)-4-Bromo-4'-methoxystilbene (6t). mp 200-201 °C [lit.[28] 177-179 °C].

(*E*)-2,4,4'-Trimethoxystilbene (6u). mp 94-95 °C [lit.[29] 89 °C].

(*E*)-3,4-Dihydroxy-4'-methoxystilbene (6x). mp d 186 °C [lit.[30]]; ^{1}H NMR: (DMSO-d_6) δ 3.75 (s, 3H), 6.70 (d, 1H, *J* = 8.94 Hz), 6.87 (m, 6H), 7.45 (d, 2H, *J* = 8.34 Hz), 8.88 (s, 1H), 9.00 (s, 1H).

(*E*)-2,4',5-Trimethoxystilbene (6y). mp 67-68 °C [lit.[31] oil]; ^{1}H NMR: δ 3.80 (s, 3H), 3.81 (s, 3H), 3.82 (s, 3H), 6.80 (m, 2H), 6.88 (d, 2H, *J* = 8.74 Hz), 7.04 (d, 1H, *J* = 16.48 Hz), 7.13 (d, 1H, *J* = 2.78 Hz), 7.32 (d, 1H, *J* = 16.48 Hz), 7.47 (d, 2H, *J* = 8.74 Hz).

(*E*)-2,4'-Dimethoxystilbene (6bb). mp 89-90 °C [lit.[32] 85-86 °C].

(*E*)-4'-Methoxy-4-*N*,*N*-dimethylaminostilbene (6dd). mp 182-183 °C [lit.[33] 185-186 °C].

(*E*)-2,6-Dichloro-4'-methoxystilbene (6ee). mp 56-60 °C; ^{1}H NMR: δ 3.83 (s, 3H), 6.92 (d, 2H, J = 8.74 Hz), 7.05 (m, 3H), 7.33 (d, 2H, J = 7.94 Hz), 7.49 (d, 2H, J = 8.54 Hz).

(*E*)-3-Stilbazole (8a). mp 81-82 °C [lit.[34] 83-85 °C].

(*E*)-4-Stilbazole (8b). mp 124-126 °C [lit.[35] 128 °C].

(*E*)-2-Stilbazole (8c). mp 89-91 °C [lit.[36] 93 °C].

(*E*)-2-Styrylthiophene (8d). mp 111-112 °C [lit.[36] 112-113 °C].

(*E*)-2-Styrylnaphthalene (8e). mp 147-148 °C [lit.[37] 147-148 °C].

(*E*)-1-Styrylnaphthalene (8f). mp 71-72 °C [lit.[38] 71-72 °C].

(*E*)-2-(4-Methoxystyryl)naphthalene (8g). mp 172-173 °C [lit.[39] 142 °C].

(*E*)-1-(4-Methoxystyryl)naphthalene (8h). mp 93-94 °C [lit.[40] 92-93 °C].

(*E*)-2-(4-Methoxystyryl)thiophene (8i). mp 133-134 °C [lit.[41] 134-135 °C].

(*E*)-4'-Methoxy-3-stilbazole (8j). mp 98-100 °C [lit.[42] 99-100 °C].

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