amino acid.

152. The method of embodiment 308, wherein said amino acid is selected from the list comprising glutamine or arginine, or an arginine derivative.

153. The method of embodiment 302, wherein said active ingredient comprises a sugar or a sugar-containing compound such as a cyclodextrin or beta-cyclodextrin.

154. The method of embodiment 302, wherein said active ingredient comprises a hormone precursor or hormone mimic.

155. The method of embodiment 311, wherein said hormone precursor or hormone mimic is dehydroepiandrosterone (DHEA).

156. The method of embodiment 311, wherein said hormone precursor or hormone mimic is human growth hormone (hGH).

157. The method of embodiment 311, wherein said hormone precursor or hormone mimic is erythropoietin (EPO).

[0029a] One embodiment includes the use of the transdermal and/or dermal composition as described herein in the manufacture of a medicament for reducing pain, fever, and/or inflammation or increasing the amount of insulin in a subject (e.g., human or animal) wherein the medicament is to be administered to said subject.

[0029b] One embodiment includes the use the transdermal and/or dermal composition as described herein in the manufacture of a medicament for inhibiting a bacterial infection in a subject (e.g., human or animal), wherein the medicament is to be administered to said subject, and wherein the inhibition of bacteria in said subject after said administration is optionally determined.

BRIEF DESCRIPTION OF THE DRAWINGS

[0030] Figure 1A. Contact angle for Water using Quartz Plate as Substrate.

[0031] Figure 1B. Contact angle for DermX® Direct "Liquid Aspirin" using Quartz Plate as Substrate.

[0032] Figure 2A. Photomicrograph of Water Spreading using Quartz Plate as Substrate. Each grid division equals 2 mm.

[0033] Figure 2B. Photomicrograph of DermX® Direct "Liquid Aspirin" Spreading using Quartz Plate as Substrate. Each grid division equals 2 mm.

[0034] Figure 3A: Optical Image of Acetaminophen dry powder (400X magnification).

[0035] Figure 3B: Particle Size Distribution of Acetaminophen suspension.

[0036] Figure 3C: Particle Size Distribution of "Liquid Acetaminophen".

[0037] Figure 3D: Particle Size Distribution of the DermX® Megaspheres™ carrier system ("Placebo").

[0038] Figure 3E: Comparison of Raman Spectra.

[0039] Figure 4A: Optical Image of Ibuprofen dry powder (400X magnification).

[0040] Figure 4B: Particle Size Distribution of Ibuprofen suspension.

[0041] Figure 4C: Particle Size Distribution of "Liquid Ibuprofen".

[0042] Figure 4D: Comparison of Raman Spectra.

erythropoietin (EPO).

55. A method of improving bioavailability of an active ingredient in a composition (e.g., a liquid) comprising the following steps in order:

(a) mixing an amount of an active ingredient with an alcohol;

(b) adding an ethoxylated oil, which is present at a final concentration of 2%-25% by total weight or total volume, to the mixture of (a);

(c) optionally, adding an amount of water to bring the composition to its final volume, to the mixture of (a) and (b); and

(d) analyzing the bioavailability of the active ingredient after steps (a) through (c).

56. The method of claim 55, wherein said active ingredient comprises a drug.

57. The method of claim 55, wherein said active ingredient comprises a dietary supplement.

58. The method of claim 57, wherein said dietary supplement comprises a vitamin or a mixture of vitamins or an amino acid or mixtures of amino acids.

59. The method of claim 55, wherein said active ingredient comprises an antioxidant.

60. The method of claim 59, wherein said antioxidant is selected from the list comprising alpha-lipoic acid, vitamin C, resveratrol, Epigallocatechin gallate (EGCG), green tea extract, N-acetyl cysteine, glutathione, a tocopherol, a tocotrienol, or mixture thereof.

61. The method of claim 55, wherein said active ingredient comprises an amino acid.

62. The method of claim 61, wherein said amino acid is selected from the list comprising glutamine or arginine, or an arginine derivative.

63. The method of claim 55, wherein said active ingredient comprises a sugar or a sugar-containing compound such as a cyclodextrin or beta-cyclodextrin.

64. The method of claim 55, wherein said active ingredient comprises a hormone precursor or hormone mimic.

65. The method of claim 64, wherein said hormone precursor or hormone mimic is dehydroepiandrosterone (DHEA).

66. The method of claim 64, wherein said hormone precursor or hormone mimic is human growth hormone (hGH).

67. The method of claim 64, wherein said hormone precursor or hormone mimic is erythropoietin (EPO).

~~68. A method of reducing pain, fever, and/or inflammation or increasing the amount of insulin in a subject (e.g., human or animal) comprising:~~

68. ~~administering to said subject~~ Use of the transdermal and/or dermal composition of claim 2 in the manufacture of a medicament for reducing pain, fever, and/or inflammation or increasing the amount of insulin in a subject (e.g., human or animal) wherein the medicament is to be administered to said subject.

69. The ~~method~~ use of claim 1~~68~~, further comprising evaluating a reduction of pain, fever, and/or inflammation or glucose intolerance in said subject.

70. The ~~method~~ use of claim 1~~68~~, wherein said active ingredient comprises a drug.

71. The ~~method~~ use of claim 1~~68~~, wherein said active ingredient comprises a dietary supplement.

72. The ~~method~~ use of claim 71, wherein said dietary supplement comprises a vitamin or a mixture of vitamins or an amino acid or mixtures of amino acids.

73. The ~~method~~ use of claim 1~~68~~, wherein said active ingredient comprises an antioxidant.

74. The ~~method~~ use of claim 73, wherein said antioxidant is selected from the list comprising alpha-lipoic acid, vitamin C, resveratrol, Epigallocatechin gallate (EGCG), green tea extract, N-acetyl cysteine, glutathione, a tocopherol, a tocotrienol, or mixture thereof.

75. The ~~method~~ use of claim 1~~68~~, wherein said active ingredient comprises an amino acid.

76. The ~~method~~ use of claim 75, wherein said amino acid is selected from the list comprising glutamine or arginine, or an arginine derivative.

77. The ~~method~~ use of claim 1~~68~~, wherein said active ingredient comprises a sugar or a sugar-containing compound such as a cyclodextrin or beta-cyclodextrin.

78. The ~~method~~ use of claim 1~~68~~, wherein said active ingredient comprises a hormone precursor or hormone mimic.

79. The ~~method~~ use of claim 78, wherein said hormone precursor or hormone mimic is dehydroepiandrosterone (DHEA).

80. The ~~method~~ use of claim 78, wherein said hormone precursor or hormone mimic is human growth hormone (hGH).

81. The ~~method~~ use of claim 78, wherein said hormone precursor or hormone mimic is erythropoietin (EPO).

82. ~~A method of inhibiting a bacterial infection in a subject (e.g., human or animal) comprising: administering to said subject~~ Use of the transdermal and/or dermal composition of claim 2 in the manufacture of a medicament for inhibiting a bacterial infection in a subject (e.g., human or animal), wherein the medicament is to be administered to said subject, and wherein the inhibition ~~and, optionally, determining the inhibition~~ of bacteria in said subject after said administration is optionally determined.

83. The ~~method~~ use of claim 82, wherein said active ingredient comprises a drug.

84. The ~~method~~ use of claim 82, wherein said active ingredient comprises a dietary supplement.

85. The ~~method~~ use of claim 84, wherein said dietary supplement comprises a vitamin or a mixture of vitamins or an amino acid or mixtures of amino acids.

86. The ~~method~~ use of claim 82, wherein said active ingredient comprises an antioxidant.

87. The ~~method~~ use of claim 86, wherein said antioxidant is selected from the list comprising alpha-lipoic acid, vitamin C, resveratrol, Epigallocatechin gallate (EGCG), green tea extract, N-acetyl cysteine, glutathione, a tocopherol, a tocotrienol, or mixture thereof.

88. The ~~method~~ use of claim 82, wherein said active ingredient comprises an amino acid.

89. The ~~method~~ use of claim 88, wherein said amino acid is selected from the list comprising glutamine or arginine, or an arginine derivative.

90. The ~~method~~ use of claim 82, wherein said active ingredient comprises a sugar or a sugar-containing compound such as a cyclodextrin or beta-cyclodextrin.

91. The ~~method~~ use of claim 82, wherein said active ingredient comprises a hormone precursor or hormone mimic.

92. The ~~method~~ use of claim 91, wherein said hormone precursor or hormone mimic is dehydroepiandrosterone (DHEA).

93. The ~~method~~ use of claim 91, wherein said hormone precursor or hormone mimic is human growth hormone (hGH).

94. The ~~method~~ use of claim 91, wherein said hormone precursor or hormone mimic is erythropoietin (EPO).

95. A method of making a transdermal and/or dermal composition (e.g., a liquid) comprising the following steps in order:

(a) mixing an amount of an active ingredient with an alcohol, which the minimum amount of such alcohol is used to solubilize such active ingredient, wherein such alcohol is present at a final concentration of 1%-75% by total weight or total volume of the transdermal and/or dermal composition;

(b) adding an ethoxylated oil, which is present at a final concentration of 2%-25% by total weight or total volume of the transdermal and/or dermal composition, to the mixture of (a); and

(c) optionally, adding an amount of water to the mixture of (a) and (b);

wherein said transdermal and/or dermal composition comprises particles 90% of which are not greater than 100 nanometers on average as determined by dynamic light scattering.

96. The method of claim 95, further comprising, adding one or more viscosity-