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(54) **Title:** USING ALTERNATING ELECTRIC FIELDS TO INCREASE PERMEABILITY OF THE BLOOD BRAIN BARRIER

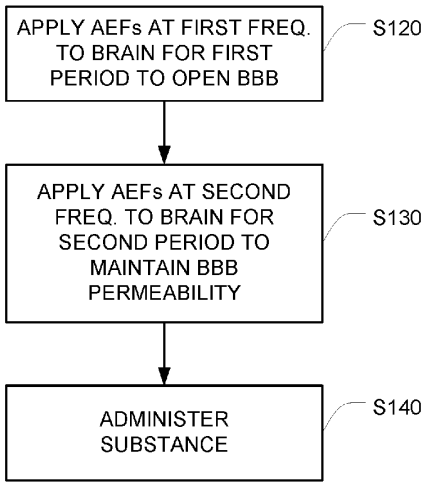


FIG. 14

(57) **Abstract:** Many drugs and other molecules cannot ordinarily traverse the blood brain barrier (BBB). However, when alternating electric fields at certain optimum frequencies (e.g., 100 kHz) are applied to the brain, the BBB becomes permeable to those molecules. When the alternating electric fields are discontinued, the BBB eventually recovers to its original impermeable state. Subsequently, re-application of alternating electric fields at the optimum frequencies will re-open the BBB. Ordinarily, many frequencies (e.g., 200 kHz) of alternating electric fields are either ineffective or less effective at inducing permeability than the optimum frequencies. But once the BBB has been opened by applying alternating electric fields at the optimum frequencies, alternating electric fields at non-optimum frequencies can maintain the permeability of a previously-opened BBB.

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