

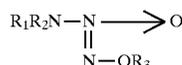
lowed by intravenous saline (vehicle) or V-PYRRO/NO. Seven hours later the plasma was obtained and assayed for aspartate aminotransferase (AST) or alanine aminotransferase (ALT), two liver injury markers. FIGS. 7 and 8 show the results of the experiment. The 0.2 μg dose of V-PYRRO/NO was found to reduce the degree of liver injury caused by LPS injection, showing that treatment with this liver-specific NO donor protects from liver injury.

All publications, patents, and patent applications cited herein are hereby incorporated by reference to the same extent as if each individual document were individually and specifically indicated to be incorporated by reference and were set forth in its entirety herein.

While this invention has been described with emphasis upon preferred embodiments, it will be obvious to those of ordinary skill in the art that the preferred embodiments may be varied. It is intended that the invention may be practiced otherwise than as specifically described herein. Accordingly, this invention includes all modifications encompassed within the spirit and scope of the appended claims.

We claim:

1. A compound of the formula:

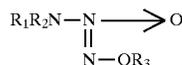


wherein R_1 and R_2 are independently chosen from C_{1-12} straight chain alkyl, C_{1-12} alkoxy or acyloxy substituted straight chain alkyl, C_{2-12} hydroxy or halo substituted straight chain alkyl, C_{3-12} branched chain alkyl, C_{3-12} hydroxy, halo, alkoxy, or acyloxy substituted branched chain alkyl, C_{3-12} straight chain olefinic and C_{3-12} branched chain olefinic which are unsubstituted or substituted with hydroxy, alkoxy, acyloxy, halo, or benzyl, or R_1 and R_2 together with the nitrogen atom to which they are bonded form a heterocyclic group, and R_3 is a vinyl group.

2. The compound of claim 1, wherein R_1 and R_2 together with the nitrogen atom to which they are bonded form a pyrrolidino, piperidino, piperazino or morpholino group.

3. The compound of claim 1, wherein said compound is O^2 -vinyl 1-(pyrrolidino-1-yl) diazen-1-ium-1,2-diolate.

4. A composition comprising a compound of the formula:



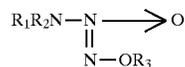
wherein R_1 and R_2 are independently chosen from C_{1-12} straight chain alkyl, C_{1-12} alkoxy or acyloxy substituted

straight chain alkyl, C_{2-12} hydroxy or halo substituted straight chain alkyl, C_{3-12} branched chain alkyl, C_{3-12} hydroxy, halo, alkoxy, or acyloxy substituted branched chain alkyl, C_{3-12} straight chain olefinic and C_{3-12} branched chain olefinic which are unsubstituted or substituted with hydroxy, alkoxy, acyloxy, halo, or benzyl, or R_1 and R_2 together with the nitrogen atom to which they are bonded form a heterocyclic group and R_3 is a vinyl group.

5. The compound of claim 4, wherein R_1 and R_2 together with the nitrogen atom to which they are bonded form a pyrrolidino, piperidino, piperazino or morpholino group.

6. The composition of claim 3, wherein said compound is O^2 -vinyl 1-(pyrrolidino-1-yl) diazen-1-ium-1,2-diolate.

7. A pharmaceutical composition comprising a compound of the formula:



wherein R_1 and R_2 are independently chosen from C_{1-12} straight chain alkyl, C_{1-12} alkoxy or acyloxy substituted straight chain alkyl, C_{2-12} hydroxy or halo substituted straight chain alkyl, C_{3-12} branched chain alkyl, C_{3-12} hydroxy, halo, alkoxy, or acyloxy substituted branched chain alkyl, C_{3-12} straight chain olefinic and C_{3-12} branched chain olefinic which are unsubstituted or substituted with hydroxy, alkoxy, acyloxy, halo, or benzyl, or R_1 and R_2 together with the nitrogen atom to which they are bonded form a heterocyclic group, preferably a pyrrolidino, piperidino, piperazino or morpholino group, and R_3 is a vinyl group and a pharmaceutically acceptable carrier.

8. The compound of claim 7, wherein R_1 and R_2 together with the nitrogen atom to which they are bonded form a pyrrolidino, piperidino, piperazino or morpholino group.

9. The pharmaceutical composition of claim 5, wherein said compound is O^2 -vinyl 1-(pyrrolidino-1-yl) diazen-1-ium-1,2-diolate.

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